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LANSCAPE AND ETHNOS:
AN ASSESSMENT OF L. N. GUMILEV'S
THEORY OF HISTORICAL GEOGRAPHY

by

John Austin (Muhammed Jamili) Brownson
B. S., University of California, Berkeley, 1974
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THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
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of
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J. A. M. J. Brownson 1988
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Landscape and Ethnos: An Assessment of L.N. Gumilev's Theory of Historical Geography

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ABSTRACT

Within the context of both Russian and Western geographical thought, this study explores L. N. Gumilev's approach to a geographical problem: how is the man-land relationship mediated. Gumilev treats the problem as a dialectic between landscape and ethnos. By "landscape" he means a particular biospheric environment, and by "ethnos" he means a natural human grouping that encompasses its domesticates and socio-technical capital to produce and reproduce a behavioral stereotype. Each ethnos emerges from a natural landscape, and interacting with social phenomena (both structures and intentionality), it forms a biosocial system which then mediates between human agency and the encompassing environment. Each ethnogenesis is initially triggered by sudden, localized changes in natural biospheric processes. This "jolt" affects behavioral mutations within a local population. Transmitted through signal heredity and modified by social institutions, this behavioral pattern gives rise to a distinct biosocial way of life. Surviving internal and external challenges, each ethnogenesis exhibits a regularity. It undergoes rapid growth and territorial expansion until, exchanging energy for entropy, its inertial trajectory declines towards homeostasis. Gumilev explains man-nature relations as a biosocial dialectic, and rejects both environmental and sociological determinism. His theory of ethnos generalizes from empirical data (primarily drawn from the Eurasian steppe) to reconstruct the historical geography of communities as systematic wholes. It also accords with more current research on the biosocial basis of human behavior. This assessment, therefore, contributes significantly to a holistic cultural geography, and convergent trends in anthropology, social ecology, social history, archaeology, communications and human ethology.
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"I have created you into Peoples (Tribes and Nations) so that you may recognize each other."

Al-Qur'an,

I first set out to understand the meaning of this statement from the Qur'an, asking the following questions. Which individuals of the species make up "a people," how are they bound together, and bounded? What elements distinguish a collective self (us) from the collective other (them), and how are these differences manifested and perceived? What biochemical, sensory and cognitive processes constitute recognition?

Initially this research was an empirical exercise, exploring the expansion and maintenance of the Muslim World as a system. It began by looking at the role of Hijra in that process. According to its Arabic etymology, Hijra was operationally defined as the migration, diffusion and movement of Islamic peoples, and their material and non-material artifacts. This thesis then focused on the Far Eastern locus of Hijra, the Chinese world system where the northern (silk road) and southern (spice route) trade and diffusion paths joined. Restrictions on field work, and problems in data, theory and method, all caused the research to veer course. The search then focused on finding, or developing, a methodical and theoretical framework. Existing models in cultural and other modes of geographic inquiry, as well as in allied disciplines, proved inadequate to either frame or answer the initial questions asked about "a people," "recognition" and "hijra." Hence, the search for an appropriate analytical framework became the primary task of this research.
Explaining Unity and Diversity as Cultural

The primary problem for scholars studying the Muslim world and Islam has been the paradox of unity and diversity (von Gruenbaum, 1955). My search for a paradigm began with a systems framework, assuming that if some processes separated one set of individuals from another, other processes must link some sets into a larger entity. In turn, this larger entity must be differentiated from other systems of the same order of magnitude. While a hierarchy of social units was implicit in a structuralist approach, it was also assumed that social structures were secondary to the ways of life, behavioral patterns or cultures that spawned institutions. But if culture, however labeled, constitutes the expression of a people, we are still in need of a model to analyse the processes that draw these individuals into socially and biologically reproductive units, different from other such units.

From Culture to Ethnicity

If culture represents the active expression (cultivation) of a particular population, its style of interaction with a particular environment, this ensemble is well defined by the Classical Greek model of ethos and ethnos. From this linguistic view, we get ethics and ethnics as a paradigmatic model to describe a the ensemble of a way of life and a people. But, since the mid-20th century, social science has reacted to earlier environmental determinism and geopolitical theories by treating ethnicity as a sociological and not a "natural" phenomena. As such, a sociological view of ethnos, as a a distinct people has lost any conceptual power to explain the rise and demise of those divisions of the species which constitute recognizable populations. The sociological approach to ethnicity favors a cognitive, and hence intentional, human agency
over a biological basis for human social behavior. It cannot, therefore, account for the display and reproduction of behavioral styles constituting a unique people and way of life, nor can it explain how those behavioral populations adapt to different environments and correspondingly modify them to create unique landscapes. Therefore, replacing a vague, cognitive sociology with an intégral bio-social approach to behavioral populations, returns explanatory power to a reconstituted paradigm of *ethnos*. Here, *ethnos* is seen as a population integral with its *ethos* (way of life) and *culture* (style of expressing and reproducing that way of life). Hence, within the species (*Homo sapiens*), *ethnos* serves to identify the primary population unit which provides individuals with a bio-social identity that underlies all its institutions and cognitive expressions.

My discovery of L. N. Gumilev's ethnological theory of historical geography as a biosocial dialectic between landscape and *ethnos* opened up a new dimension to the research. While Gumilev's theory could possibly provide the paradigm for interpreting the Muslim World as a hierarchically segmented ethnic system, it first required extensive digestion, clarification and substantiation. The concept of ethnic system (*ethnos*), however, required overcoming its discursive limitations, reconstituting it as a useful analytical category and effectively integrating it into the process of geographical inquiry. As a concept, "ethnicity" (*ethnos*) is used so diversely that little congruity can be found among disciplines, or among scholars in any one discipline. Geographers, for example, differ in national traditions of discourse. In the English speaking sector of academic geography, "ethnicity" is uncritically used to label a rather vaguely defined social group. Erring in favor of cognitive social determinism over environmental or biological determinism, the hegemonic discourse of Anglo-American social science is rather vague about nation, race and
ethnos. Here, vagueness may be accounted for by the political considerations of governing a multi-racial and multi-ethnic society, and the corporate role played by academics as part of a hegemonic state structure in legitimating the prevailing ideology. Likewise, academics are reacting to the recent historical distortion of biology to legitimate racial segregation and political policies towards ethnic groups and lands, e.g., in Germany, South Africa and America.

Among all human populations, groups develop, maintain and biosocially reproduce a their distinct identities and cultural styles. But the terminology to analyse these behavioral phenomena remains confused as much by differences among scholars in language, ideology ethnic and ethical traditions, as by any science. Some progress can be seen, however, particularly in a developing international discourse drawn from work in ethology, sociobiology, neurophysiology and other biological sciences. Similarly, despite such attempts as the Human Area Resource Files (Murdock, 1949), it is from the Soviet Union that an effective standardization of ethnos emerges as a systematic inquiry into ethnic categories and populations.

Despite problems such as contradiction between theory and practice and ideological interpretation, Marxism has served as a vehicle for the diffusion of Soviet categories of ethnic and national identity. While much of the supporting discourse around these categories is equally as wired in social determinism as its discordant American counterpart, Soviet use of physical anthropology in combination with linguistic and other evaluations of material and non-material culture to assess both ethnicity and territory, has had a significant impact on the world. China, for example, uses Soviet categories to define distinctions between ethnic groups, territories and strategies for cultural, political and economic autonomy, albeit limited and highly supervised. Other encouraging trends emerge from work by UNESCO and international
agencies in defining the rights of peoples to their cultural, political and territorial identity. Therefore, as geographers have not attempted to define "ethnicity", beyond references to a cognitive based identity linking people with common traits, problems posed by trying to resolve the inconsistent and superficial use of the concept ethnus as "a distinct people" demanded critical attention, and thereby took precedence as my subject of inquiry. The application of such research can be seen, for example, in the tasks facing Canada in defining the concepts of "Quebec as a distinct society" or "aboriginal rights."

Surveying research literature on ethnus from different cultures and countries, Soviet scholarship stood out as a challenging attempt to systematically and scientifically define ethnus as a basis for territorial organization and nationality policy. To understand the critical importance of this subject to Soviet society, one need only mention the current rioting between Armenian and Azerbaijani "nationals" over a mutually-populated, autonomous region currently administered by the Azerbaijan S. S. R.. Given the vast differences in size and level of development among the many ethnic groups (ethnoses) within the old Russian empire inherited by the Soviet Union, their need for a scientific approach to ethnus is readily understandable. So also, implications for Canadian policy towards indigenous peoples are suggested in Farley Mowatt's (1979) look at Siberian peoples. Indeed, I would claim that what constitutes distinct peoples (ethnoses) as cultural and territorial ensembles, represents the primary task facing our present anarchical, devolving world system, plagued as it is by conflicts, pitting strategies for imperialistic hegemony by state powers against movements for national liberation, regional and local autonomy.

In my survey of Soviet ethnography, I discovered scattered critical references to L. N. Gumilev's theories of ethnus. As the criticism of Gumilev took a social determinist (cognitive) stance, my interest was aroused.
Searching out his work I found it to be the only biosocial approach to ethnos in geographical literature. Since first discovering his work in Soviet Geography: in Review and Translation, I have found Gumilev's theory to be increasingly important in explaining the formation of behavioral subdivisions within Homo sapiens, ambiguously defined by other authors as races, cultures, societies, ethnic groups, or nations. Accordingly, the most crucial aspects of Gumilev's theory were also the most criticized, especially the following concepts:

(1) a natural, energetically caused ethnogenesis;
(2) maintenance of ethnos through "behavioral rhythms"; and
(3) an integration of natural and social processes.

Similarly, while presenting the greatest challenge, these concepts are most likely to lead his theory towards the increasing convergence of biological, social and cultural studies as a new synthetic "human science."

My path to Gumilev's work did not pass through the tedious fields of "Sovietsology" and Marxist thought, except as necessary for any modern cultural geographer, nor have I have delved deeply into the complexities of the Russian language. But at this point in the research, a prolonged period of language study prior to reading Gumilev within the rich linguistic tradition of Russian scholarship was not feasible. Consequently, T. Shabad's perceptive translations are my primary sources for discovering the intricacies of Gumilev's writing. Likewise, my senior supervisor, P. L. Wagner's command of the Russian sources and context guided me deeper into this study and its implications, while enabling me to avoid the inherent traps of working with secondary materials. The most salient aspect of this reading and assessment of Gumilev's work, however, has been a reconnection with my earliest academic interests -- nomads, the historical geography of Central Asia, and the adaptive strategies inherent in relationships between ecosystems and ethnicity.
INTRODUCTION

The Problem and its Theoretical Basis

This research began with an inquiry into the cultural geography of the Muslim world, taking an ecosystemic and ethnographic approach to its population, encompassing landscapes and field of cultural coherence and difference. But, the problems I encountered were more theoretical than empirical. Therefore, after considerable research and consultation with my senior supervisor, the subject was changed to address those problems within the context of cultural geography. The research then focused on the assessment of a number of rather promising theoretical propositions on ethnosc, historical geography and synthetic method, as presented by Leningrad academician L. N. Gumilev.

Among the problems raised by my line of inquiry into Gumilev's theories, several issues were critical. First, how do ethnicity and culture play a role in the relationship between an inhabited landscape and a its human population. Second, as a population interacts with, and modifies, its encompassing landscape, to what degree do ethnicity and culture affect each other and mediate that process. Third, assuming an integral relationship between population, ethnosc, culture and landscape, how does that ensemble reflect a unique local symbiosis, what are the indicators, how do we "read" an ethno-cultural landscape. That question leads to the fourth issue: is ethnosc the primary social unit of cultural analysis. If so, what is the nature of its construction and
If not, what subdivision of the human population represents the most appropriate level at which to study these relationships from an ecocystemic and ethnographic perspective.

In the confluence of behavioral characteristics attributed to any human population and its encompassing landscape, culture (to cultivate a way of life) necessarily involves an ethos, (a way of life) and an ethnos, (the population) which cultivates that particular way of life. This linguistic paradigm provides a simple and effective analytic metaphor. It was used by Herodotus, for example, to describe the Scythians as an ethnos through their observed behavioral patterns which constituted a way of life, or the Scythian ethos. I will, in general, use the terms lifestyle, way of life, behavioral stereotype or pattern, as interchangeable with ethos, and, at times, with culture. That is, if culture, as defined by the OED, represents a "trained and refined state of the understanding and manners and tastes, [and the] phase of this prevalent at a time or place," then it implies a process within a particular way of life as shared by a specific population. In this light, I define culture as "how people do what they do," and their way of life as being the term most aptly describing "what they do." Therefore, an ethnic population (ethnos) is both defined by its way of life, and constituted by those who share that way of life. But, as a population of organisms of the same species (Homo sapiens) are related more through their shared way of life, or total behavioral pattern, than their physical, genetic characteristics, I would argue that the basis of culture is a natural process of behavior. As such, this natural, behavioral process and its constituent population are affected by, and modified by, their encompassing landscape. Yet this relationship is reciprocal, as the adaptive, and constantly changing, way of life manifested by a population, or ethnos, affects and modifies the encompassing landscape of which it is an
integral element. Implicit to this thesis, and to my assessment of Gumilev's work, is the premise that landscape and ethnos represent co-evolutionary elements within natural systems undergoing processes of transformation and exchanges between energy and matter within the biosphere.

Having defined the ethnos/ethos paradigm, and its linguistic analogies (ways of life, etc.) as representing inseperable elements of specific behavioral populations, the term landscape now requires attention. Gumilev uses the term landscape to mean the bio-geo-chemical ensemble co-existant and interactive within a particular spatial area at a particular time (cf. p. 195), in common terms, an ecosystem. Therefore, a second premise addresses the integrity of an ethnos, with its way of life and its environment, or encompassing ecosystem. The central problem in this thesis is how an ethnos differs from less distinct, or heterogenous, populations inhabiting an ecosystem.

Second, in the natural history of specific landscapes marked by traces of particular ways of life, is there a discernable pattern by which ethnoses arise and emerge onto the plane of social history, then disappear again. If such a pattern can be established as a general model, then what natural processes cause ethnoses to emerge and to disappear.

When confronting the problem of ethnoses as a primary subdivision of the human population (as, for example, in the case of the Muslim world), we are dealing with hierarchical systems in which, Gumilev maintains, units of analysis are ordered along biological, not sociological, lines. This would imply reciprocal relations between such groups and their landscapes as culturally modified environments. Assuming that a system of the largest order constitutes a hierarchical segmented structure, e.g., the Muslim, Sino or Indic world systems, what interactive elements and processes link its subsystems; how, and to what extent are they related internally, and to similar aspects of other
such systems. Further, how do those elements and processes differ in local
cultural praxis, and from similar ensembles in other higher order systems. Do
all comparable large order systems have similar patterns of internal structure
and subordinate populations. And, what processes give rise to, maintain, and
cause the demise of these systems, and is there any regularity or universality
to them. Underlying these questions is a recognition of the following condi-
tions: an ecological basis; regular, systemic and hierarchical ensembles of
population, culture and landscape; processes undergoing continual transforma-
tion, rather than static states; biosocial rather than either purely biological
or social (cognitive) phenomena; corporeally embedded codes and modes of cul-
tural transmission: in short, the components of a true human geography.

The term "ethnicity" appears constantly in the literature as a rubric
for community, people, nation, subculture, social, or cultural system, but its
vagueness, widely diverging definitions, and sociological use creates continu-
ing problems. Nevertheless, ethnicity can be a useful concept to represent
hierarchical systems of biosocial processes, their genesis, transmission, and
maintenance.

In the initial research, I tried to stretch the notion of culture and
sub-culture to cover a biosocial field as a type of systems model which would
fit the problem, i.e., explaining the Muslim world's unity and diversity. Yet,
in order to construct a model applicable to populations and landscapes as
integral systems, the concepts of both culture and society were limited by
their theoretical development which precluded a necessary fusion with ecology.
The concept of ethnicity, however, was once used as part of a natural science
of man, and with new biosocial approaches, e.g., sociobiology, ethology, bio-
rhythms, etc., it again has strong potential as an explanatory construct, that
is if some theory and method could be found within its frame of reference and
made operational. Accordingly, using the term "ethnos" (or even van den Berghe's 1980 suggestion of "ethny"), rather than "ethnic group," corresponds more to its etymological roots, Soviet, and international usage while avoiding semantic associations with "ethnic studies," a rubric for Afro-American, Asian, Hispanic, and Native studies, or the sociological determinism of the Glazer and Moynihan (1975) persuasion.

Geographers, in general, have generally been uninterested in developing any theoretical notion of such a system of ethnoprocesses, instead describing static patterns of ethnic distribution in which ethnicity purportedly consists merely of a common culture and social structure existing by virtue of its members' self-ascription as such, and of their intentional choice to maintain affiliation. There appears a vague notion throughout the literature that one could change one's ethnic affiliation or lose it by assimilating into a larger world of other social identities, with class, nationality, political ideology, etc., taking the place of ethnicity. Overcoming these liabilities, if possible, and appropriating "ethnos" as a frame of reference within which to build a systematic construct of human adaptation and landscape creation was, therefore, the task at hand. Moreover, in light of an emergent trend towards biosocial research into culture and society, this approach seemed appropriate while also finding support in taxonomic procedures of Soviet ethnology in general (cf. Bromley, 1974). But most of all, Gumilev's work provided the impetus for taking this approach, as he had set out the basic questions and answers nearly three decades ago. Therefore, bringing his work out from obscurity contributes significantly toward developing a new science of ethnology while further legitimating this approach. Situating ethnology within "geography" may also help to revive the waning raison d'être and praxis of the discipline which has lost its anchorage in North America.
An intensive reading of Gumilev, coupled with an extensive reading of background materials, and in particular a growing body of current publications in biosocially oriented research, has supported views that have been reported in the literature. These views converge in a recognized and important stream in which Gumilev's concept of landscape and ethnos, will play a significant role. In my initial reading of the literature on ethnology and ethnography van den Berghe's (1983) sociobiological approach seemed the major contemporary work to recognize a biological basis for ethnicity. But, current work in several fields is moving towards locating material culture and environmental influences within an ethno-ecological frame of reference. No term has as yet been coined to represent this trend, and although "ethno-cognology" and "eco-ethno-ethology" (Brownson, 1969, 1974) are no less cumbersome now, the direction towards merging "oikos" (environment), human communications, "ethnos" (biocultural ensembles) and "ethos" (behavior), into a form of scholarly research and discourse "logy" and presentation "graphy" signifies a potential confluence.

In an evolving science of mankind a new ensemble of methodological and theoretical constructs relating behavior, environment and ethnos might constitute what T. Kuhn (1980) refers to a "disciplinary matrix." Examples of cells in such a matrix would include: archaeology, beginning with Leroi-Gourhan (1965), and proceeding from earlier work, e.g., in "ethnobotany" (Steward, 1955; Beardsley, 1956); the new approaches of ethnoarcheology (Kramer, 1982), social archaeology (Redman, et. al., 1978), human ecology (Butzer, 1982); anthropology (Harris, 1971; Sahlins, 1977), and particularly studies in biocultural aspects of ritual, (V. Turner 1985, 1986; d'Aquili et. al., 1979; E. T. Hall, 1984), and equally important, interaction rhythms (Davis, et al., 1982). Other inputs from cultural and historical work exist: phenomenological approaches to myth and ritual (Doty, 1986); the influence of the Annales school on
material history (Braudel, 1980); interdisciplinary history (Rotberg and Rabb, 1981); philosophical and epistemological approaches (Heyer, 1982; Lopreato, 1984; Harre, 1982, 1986) and a bio-social approach to communications in cultural geography (Wagner, 1986, 1987). Many more examples come from ecology, (Hardesty, 1977), biology and biorhythms (Schilcher and Tennant, 1984; Sollberger, 1965); ethnology (Eibl-Eibesfeldt, 1970); and sociobiology, in particular gene-culture co-evolution, (Lumsden and Wilson, 1983). New research continues to develop biosocial approaches towards theoretical constructs, methods and empirical material covering a wide span of human time and inhabited landscapes. While avoiding any suggestion of a "grand theory" or unified discipline to encompass such a diverse body of research interests, aspects of this recognition of the biosocial approach to human behavior and social life might well represent the new ethnology which Gumilev proposes, and which is assessed here as part of his overall theory and method.

In terms of any other general theory or systematic method for analytically treating the Muslim world, the literature presented few options except for fragmenting it, treating it as a "lost" Islamic civilization, as synonymous with the Middle East as a cultural region, or as a purely religious system in which "belief" metaphysically links the disparate sociocultural and ethnic units and their respective landscapes into a transcendental unity of theory and purpose. Not even the treatment of religion as a cultural system (Geertz, 1969) could produce a necessary synthesis between landscape, culture, and the embodied biology of social production and reproduction. A significant departure, however, first appeared when Bromley (1978) referred to a hierarchical taxonomic system and concept of endogamy sufficient to account for ethnic maintenance. Next, within that relevant essay was a reference to L. N. Gumilev's notion of "ethnic rhythm," albeit, criticizing it as an overly biological
approach. In following this lead, I continued to read Soviet ethnology paying special attention to work on Muslims, and in this context uncovered another and extremely useful reference to Gumilev, (Rywkin 1982).

In his work on Soviet Muslim identity, Michael Rywkin (1982) identified Gumilev's approach as explaining what has been "expressed in various forms by Benningson, Carrere d'Encausse," among others. He finds that Gumilev's notion of "ethnic rhythm" expresses the concrete perception of difference which "is the essential element, however hard it is to define it more precisely," in the continuation of strong Muslim identity within the Soviet Union. He also finds this to be "the case of the Jews," although he omits further reference to the obvious cases of Ukrainians, Byelorussians, etc. who constitute their own ethnososes. In a later work on the same subject, Rywkin (1984:11-12) found that Gumilev's notion of 'ethnos' as a kind of inner drive... corresponds to a feeling of Islamic identity to which even an agnostic can can adhere... of belonging to a group distinguishable from others by... a particular rhythm... felt in the religion, in the way of life,... habits, traditions and so on, which for [various ethnic groups] we classify as Islamic for lack of a better common denominator.

Both here and later (cf. p.19) Rywkin indicates that a convergence of research exemplified by Gumilev's writing might serve as a potential model for an ethnography of the Muslim world.

Prior to a discovery of Gumilev's writings on ethnogenesis and ethno-rhythm, the most significant advance came from the findings of A. Leroi-Gouran (1964). Drawing on his extensive archeological work, Leroi-Gouran developed a notion of ethnostyle, i.e., a set of recognizable traits embedded in a symbiosis between performance and material culture, that synthesis of both the processes and the product of gestural display which Wagner (1984) compares to "dialect as 'artifact.'" Gumilev's work held a promise of a possible model for
reinterpreting the Muslim world as a hierarchical, ethnically organized, behavioral system in which cultures were embedded in subconscious processes and transmitted through modes of repetitive, artifactual expression. This expectation launched a first reading of Gumilev's works available in English translation. If the editor of Soviet Geography, had not recognized a unique contribution to the literature, there would be no access to any of Gumilev's work outside of Russian texts and a short collection of essays translated into Hungarian, (ironically, from Shabad's English translation). From this unexpected turn in the research, the data now came from Gumilev's works in translation, with only secondary access to his work in Russian. The primary base for analysis here, the "Landscape and Ethnos" series, consists of fourteen major articles appearing in the Leningrad University journal and translated in Soviet Geography between 1966-1980. In addition, I drew upon a number of other translated articles: several by Gumilev, three co-authored by him, and two criticisms, one by V. I. Kozlov from a sociological perspective and a second consisting of excerpts from an interdisciplinary seminar convened at Leningrad's Geography Faculty to discuss the Gumilev-Kozlov debate.

This series of fourteen articles on Landscape and Ethnos proved a difficult subject at the first reading. Certainly wide ranging, many of the ideas were exciting, others vague; many of the references were obscure except for a Soviet specialist, from grand historical schemes responding to Toynbee, to polemics addressed to Marxist colleagues. What was to be done with this material? Initially, it was relegated to a short section integrated within a mélange of theoretical constructs from anthropology, sociobiology, neurophysiology, and post-structural philosophy. The breadth of Gumilev seemed to be lost within an equally wide ranging ideological mosaic that would take years more to sort out. In order to avoid a bricolage, one theoretical track had to be
taken. Since Gumilev's concepts were the most comprehensive and his empirical background of research on Central Asia paralleled my own, his model was chosen. The challenge had become one of interpreting and operationalizing Gumilev's ideas into a framework that could incorporate a comparison of his method of empirical generalization and results with my own data and secondary sources.

A second reading of Gumilev was begun, this time chronologically arranging the development of his ideas, definitions, and descriptions of terms in some systematic fashion. In addition, several crucial articles appearing outside of the series were added to a sequential examination of his argument and response to controversy for over a decade. Many of the issues addressed were initially repetitive and unclear. To clarify the issues, I undertook a contextual approach to the major problems under discussion and those which seemed especially controversial, hence a reading of recent Soviet intellectual history. This involved a refamiliarization with the terminology, discourse, and rhetoric of dialectical materialism and the combination of original sources in translation with secondary sources in order to grasp the issues within Soviet geography and social sciences, particularly ethnography. The result of this contextual reading within a highly demanding system of discourse began to emerge as recognizable images.

A third reading of Gumilev involved a reorganizing of his ideas from a diachronic, sequential path into a synchronic pattern. From this structural synthesis, I have attempted to extract a set of operational propositions. Prioritizing these statements, the role of ethnorhythm in the transmission and recognition of system-wide patterns and of subsystem stylistic differences was the principal issue for my research. That concern, however, has taken a subsidiary role to an assessment of Gumilev's work within Soviet geographic thought.
The primary focus of this research must now be seen as a study in the history of geographic thought, and secondarily directed toward the operationalizing of a model and the testing of it against other theoretical considerations and against my own and other empirical observations.

It remains clear that Gumilev is a historical geographer, concerned with interaction and symbiosis within human landscapes of the past, rather than an ethnographer of living cultures. Yet my concerns give equal weight to the ethnographic present as well to the historic paths by which we have arrived at this point in the diffusion and distribution of ethnic styles, rhythms and systems throughout the ethnosphere. To the extent that Gumilev's propositions can be supported by data, they can be integrated into an operational, behavioral model of ethnos as systemic, biosocial processes. Where they cannot be supported empirically, they still have value as a conceptual overview challenging the static view of ethnicity as affective.

**Contexts and Subtexts Within Gumilev's Ethnogenic Model**

To understand the layered texts within Gumilev's protracted arguments over some twenty years, we must think of strands of discourse (subtexts) which act as warp threads among which are woven the contextual cross-threads which together display both the living fabric of an intellectual dynamic and the intertextuality of its discourse. Soviet geographic thought has evolved in an asynchronous, parallel track with the Anglo-American and even most European geographic traditions following WWI. Two problems can arise for the casual reader of Soviet geographic literature, first that of reading our own tradition into the translations, and secondly becoming overwhelmed by the contextual facts and intellectual history of the USSR. To avoid both traps, I will briefly schematize the intertextual background to Gumilev's theoretical and
empirical writings, and the streams of subtext; intertextual means those implicit references to other works within a flow of discourse, while subtext refers to the equally referential, yet again not explicit streams of thought underlying the written surface (cf. Jefferson and Robey, 1982). We can thus refer to the various currents and streams flowing through Gumilev's texts as eddies in a larger pool of Soviet geographic discourse.

Three levels of subtext are to be found in most all post-1956 Soviet geographic discourse: 1) a philosophical underpinning, 2) the language and method of historical and dialectical materialism, and 3) the thaw and shift in dialogue from a rigid social determinism of the Stalin years to a more pluralistic set of propositions within the expanding parameters of ideology. First, there is either an explicit or implicit philosophical stance in every academic Soviet geographic publication. North Americans are more used to general discussion of an empirical nature, or even theory unhinged from any reference to a philosophical tradition. Conversely, the Soviet intellectual tradition in geography falls within a strongly philosophical tradition, but focused on a Hegelian dialectic and Feuerbachian materialism appropriated by Marx into his philosophical writings. Thus, a philosophical position is implicit in reading Gumilev.

This brings us to the second point, the language of historical and dialectical materialism. This branch of philosophy and its attached ideological positions has evolved a specialized discourse, only recently subjected to reinterpretation and and relaxation of fixed categories. Two of its key terms, however, "motion" and "matter" continually recombine in Gumilev's work and are critical to understanding the discursive context of his argument. It is assumed that all phenomena are material, rather than metaphysical in their reality, and perceived through the senses rather than through an ideal state that
exists in the mind. Matter, then, has three universal attributes: motion, connection, interaction. It is assumed that motion is the natural condition of existence of matter and involves any change or interaction in matter. Connection is that form of motion that involves the coordination of change among any phenomena, which implicitly effects change in another phenomenon. Interaction, then, is a form of connection involving the means by which matter-in-motion is exchanged within a controlling system. Finally, motion is intrinsically contradictory, a unity of change and stability, of disturbance and rest, in which all motion-of-matter has a vehicle or substrate and occurs only in relation to another motion-of-matter.

There are also four forms of motion-of-matter: physical, chemical, biological and social, all social processes having within them the other three forms. While all human beings and landscapes contain all four forms, the decisive role in social processes is played by the laws of social development as motion-of-matter. This last point involves one of the more controversial issues in Gumilev's writing, the degree to which he is in conformity with this principle. Finally, these four forms of motion-of-matter have three attributes: (1) they are essentially different among themselves; (2) none is reducible to another, and (3) they involve development. Life, for example, is a unique type of motion-of-matter that appears at a particular stage of the development of matter, as social processes are a unique development of motion-of-matter, evolving at a particular stage of life and progressing in a spiral pattern.

We now have a view of the basic structure permeating the Soviet system of discourse and geographic writing, including that of Gumilev.

The third subtext involves the academic refraction of a major political shift in Soviet life. The post Stalin thaw caused a breakup of the ice bound doctrine that
maintained the clear and necessary separation of physical from economic (all non-physical) geography with their supposedly mutual exclusive sets of laws, so that the integrated study of man in relation to his environment; long a central theme... was ruled theoretically illegitimate, (Hooson, preface in Anuchin, 1977:5).

In introducing the English translation of V.A. Anuchin's seminal work, originally submitted as a doctoral thesis in 1960, Hooson states that Anuchin proposed a unified science of geography and a reassessment of the dogmatic constraints that began to wither in the mid-1950's. Gumilev's work is part of a major shifting discursive process in which caution was needed as, in Hooson's (1977:5) words,

practitioners reestablished spiritual contact with their academic forbears, redefined their own positions, and in general effected a shift in the centre of gravity in the subject toward the human side.

Several readings of Gumilev's subtexts in this shifting and melting flow point out his position in relation to academic, social, and political currents. Consistently siding with Anuchin's opponents, led by Gerasimov and Kalesnik, two leading physical geographers, Gumilev's rationale appears to be insistent that ethnography is a natural rather than a social science. His more pronounced ecological orientation towards a man-nature relationship seems to have found its chief support among geographers on the physical side. Another problem might have arisen from a perception that the socio-economic approach of Anuchin's supporters, (Baranskiy and Saushkin) could come to dominate a unified discipline at the expense of a fledgling cultural and historical approach. Here we encounter the thicket of contradiction over which of the two forms of motion-of-matter, social or biological, will be regarded as dominant. Neither Gumilev nor Anuchin was ready to deconstruct the rigidity of the four types of motion of matter or the whole philosophical premise. In fact, each proposed a different form of interaction between the two types.
Gumilev's first approximation of a historical geography (a model of the environment as human habitat shaped by dialectical interaction) comes close to early 20th century formulations by both Sauer and Barrows of morphological and social ecological processes. But there evolves in Gumilev's work a sense of the corporeal basis of behavior, coming close in certain respects to both a contemporary ethology and phenomenology, (cf. Merleau Ponty, 1962). Yet he avoids perception as a process integral with landscape, using more a conservative definition of landscape as a spatial envelope of bio-geo-chemical processes in which man participates.

The "spiritual antecedents" of Gumilev seem to lie in the grand Russian tradition of a 19th century humanist science rooted in a materialist, monadist epistemology. Primarily referring to the "energetic" principles of V.A. Vernadskiy (1865-1945) and his predecessor Dokuchayev (1846-1904), there is a strong Russian attraction to the mysteries of the universe, unfolding within the human project and becoming accessible through scientific research on the so-called energetic principles, which invoke processes rather than states.

Research on human electromagnetic fields and biopsychological energetics have long been taken seriously in Soviet science. Gumilev's ethnographic tradition, however, goes back to Peter Kropotkin's work on ethnic communities in Central Asia, expressing the "vitalist" elements of cooperation and competition. Perhaps Gumilev's own exile into that region and involvement in archaeological and orientalist historical work established both a sense of historical process embedded in the landscape and a resonance with Kropotkin's emotional involvement as a geographer in exile. As well, both Gumilev's parents were poets steeped in the mystique of "Mother Russia," although each differed in the symbolic interpretation of those traditions. In purely con-temporary matters, however, Gumilev continues to side with the physicalists of the old school,
despite correlations between his and Anuchin's work. For example, he argues that Kalesnik's "descriptive definition of the concept of landscape comes suprisingly close to our [Gumilev's bio-cultural] descriptive definition of ethnos." Moreover, the Russian term for landscape studies "landshaftovedeniye," implies regional geography and it is directly adapted from the 19th century German "Landschaft" tradition. Its modification from a classical meaning to a modern scientific system was achieved slowly, even after the Revolution, and significantly, never lost a holistic sense of the "integrity of the geographic (landscape) envelope," (Kalesnik, 1962:21).

Gumilev's use of a taxonomic and general systems models, in which stages of ethnogenesis approximate the life cycle of an organism, and the analogy he draws between tradition and signal heredity, all borrowed from the biological sciences, suggests an ethnography more akin to ethology than to sociology. Seeming to call for a unified subject matter in a heretofore divided geography, Gumilev (1968a:27) argues for an all-encompassing concept of ethnolandscape, as "we have grounds for viewing the earth's anthroposphere, including man-made technology, domestic animals and crops as an entity in two aspects, social and natural."

The empirical generalizations which Gumilev uses as supporting evidence are at times 'overgeneralized' while some of his propositions lack sufficient theoretical proof and consistent argument. This invites criticism, especially when challenging the dominance of either purely social or purely biological paradigms while yet rejecting Anuchin's particular vision of a geographic synthesis. Despite weaknesses in the data supporting his arguments, Gumilev makes a major breakthrough, bringing together history and ethnography in a behavioral interpretation and synthesis of natural and social dynamics.
Gumilev Reviewed in Outside Sources

In the occasional publication of "Progress in Human Geography" which takes note of what occurs in the Soviet branch of our discipline, R. A. French (in Baker, 1972:111), cites Gumilev's move from a more determinist position towards that of Vatsunskiy and Yugay, in a synthesis of interaction between bio-physical and social-cultural relativism. French quotes Gumilev (1970:2 as saying, "We need to comprehend the concept of a different ethnos in order to make proper use of the evidence derived from that ethnos." French also states that Gumilev has followed Trusov's call for adoption of Vernadskiy's 'noosphere', a materialist antecedent of Edouard Le Roy's and Teilhard de Chardin's more metaphysical concept, (see below, p.18). Other terms for defining the man-land and social-environmental relationship, in circulation among Soviet geographers, include anthroposphere, sociosphere, technosphere and noology. From this perspective we seem to find a continental discourse pervading a Russian-French intellectual tradition; and contrasting with the Anglophone geographers of both the Western Marxist and positivist-empiricist philosophical inclinations.

In a recent review of the state of Soviet geography, David Hooson (1984) provides a summation of Gumilev's main contribution to Soviet geography, a nascent cultural stream analogous to the Barrows-Sauer stream in North American geography. Hooson (1984:97) thus states that, in the Soviet Union there is still little of what would be recognized as cultural, historical and political geography elsewhere, and some of the few extant examples such as the eccentric pieces by Gumilev on ethnogenesis (1973, 1981) have come in for considerable criticism (Drozdov,1977).

Despite Gumilev's critics, Hooson recognizes him as the only major Soviet geographer attempting a cultural geographic synthesis, which raises a problem
over the lack of interchange between that academic community and its North American counterpart. A more active dialogue would benefit Gumilev's position and provide an opportunity for a precise contemporary synthesis between phenomenological and materialist approaches. It may be the case that with a neo-Marxist tradition developing in Western Europe and the Americas, joining neo-phenomenological and other approaches in a post-modern rethinking of geography's role in academic production and reproduction, this epoch may engender a level of philosophical inquiry and reflexive discourse in which geography may reemerge as a major discipline.

**Gumilev in the Context of Soviet Ethnography**

Russian ethnography has been discussed in Western academic literature primarily by three scholars, Ernst Gellner, D. Zil'berman, and Steven Dunn. According to Dunn (1976:159), it was traditionally looked upon as a kind of extension of Geography, as the culmination of the latter rather than as an independent discipline. This viewpoint maintains its force despite opinion about the predominantly historical orientation of Soviet ethnography. Discussing the disciplinary perspective of "ethnography versus ethnic processes," Dunn cites Yuri Bromley as leading a school which emphasizes "ethnic affiliation according to a factor of endogamy," while Chebokov is cited as representing the idea that an ethnic unit is a supra-social entity. Although Dunn, writing in a rather conservative "marxian" manner, ignores Gumilev, the Israeli scholar Zil'berman (1976) recognizes Gumilev's role, discussing him in reference to a conservative reaction to his ideas of ethnic processes. Zil'berman states that

Gumilev has tried to combine in an unusual and original manner the methods of history, ecology, cultural and symbolic anthropology, ethno-psychology and even crime detection and philology in order to produce a finished version of an ethnographic discipline which he
himself calls 'ethnology'. Incidentally, it is Gumilev who most creatively follows the original traditions of Russian ethnographic and philosophical anthropological thought (1976:150).

In the continuing debate among Soviet scholars over nature and society, Gumilev is also caught in the rivalry between the Leningrad and Moscow university traditions. He tends to follow a holistic natural science approach going back to Leningrad academician Vernadskiy and inclusive of the energetic concept developed by Vernadskiy in the 19th century. Vernadskiy was a brilliant theoretical scientist who was engaged in a wide range of research, particularly in areas at the boundary between living and non-living matter and energetic transfer. Best known for his work in crystallography he also developed the concept of a biosphere. In a 1922 Paris lecture on the biosphere, Vernadskiy presented a concept of progressive biological evolution along the lines of an increasing "encephalization" towards what he defined as "Noo-sphere." In the audience were French philosopher Edouard Le Roy and Jesuit anthropologist-philosopher Teilhard de Chardin, who later discussed this idea in correspondence and appropriated it into a metaphysical system attempting to reconcile Roman Catholic theology and scientific evolution in a Bergsonian manner. One prime criticism of both Teilhard de Chardin and Le Roy is that they never cited nor credited Vernadskiy, although many of his concepts are visible in their work. Later, the idea resurfaced in its seminal materialist form strongly influencing the Russian scientist Trusov and Soviet academia. Gumilev, however, remains situated in the line of Vernadskiy, and, of all contemporary Soviet scholars, best articulates this holistic merger of science and the study of the natural basis of social phenomena.
An Appraisal of Gumilev's Theory from an Orientalist Perspective

Another scholar specializing in Soviet Muslim minorities (Michael Rywkin, 1984), introduces Gumilev’s concept of ethnus in the context of Soviet nationality problems. In facilitating a national symbiosis inclusive of the Muslim polity, the soviets encountered difficulties in terms of identity and allegiance. More than any other external observer of the Soviet intellectual scene who has recognized Gumilev, Rywkin tackles the problem Gumilev’s theories pose for orthodox Soviet ethnology and geography as Marxist social sciences. From a perspective oriented towards studies of Soviet Muslim policy, Rywkin appraises Gumilev’s contribution to that discourse in the following passage that defines ethnus and its relation to Islam:

Ethnos is an inner drive, acquired from early childhood and bound to last as long as the custom or tradition of an ethnus survives ... Until exhausted, this drive, habit or tradition will overcome all possible obstacles, even the loss of mother tongue, of motherland and of own culture ... there are only two possibilities for ethnic assimilation: (1) biological absorption through intermarriage, or (2) loss of inner drive after a very long process of acculturation, spreading over an entire historical period ... [thus] when applied to the Muslims of Soviet Central Asia, Gumilev’s yardstick of inner drive, habit or tradition cannot appear otherwise than Islamic in nature. But distinction is again to be made between Islam as a religion and a feeling of Islamic identity, to which even an agnostic can adhere, a feeling of belonging to a group distinguishable from the others by what Gumilev calls a particular rhythm. This rhythm is felt in the religion, in the way of life, the moral values, habits, traditions, etc. which for Uzbeks, Tadjiks, etc. we characterize as Islamic, for lack of a better denominator (1984:11).

Here we find articulated the crux of Gumilev’s contribution to the model to be developed here. Rywkin has thus defined religion, it is not a belief system, but a system of embodied social practice resonating with emotional rhythms encoded in everyday life. Emotional rhythms thus constitute the Muslim world. My task is to explicate the institutions common to all ethnoses at whatever level (institutions which contribute to shared rhythms and establish paths
connecting actions into a single system embedded in a set of landscapes) the material artificial and natural environments.

Development of Gumilev's Theory in His Social Context

In 1968, Gumilev proposed that "an essential condition for ethnogenesis is a combination of two or more landscapes . . . heterogeneity stimulating change." This statement followed Yu K. Yefremov's proposal of a "sociosphere," thereby aligning Gumilev against the unified theory of Saushkin and Baranovskiy, as articulated by Anuchin and which tended towards a more social determinist, rather than biological, concept of ethnicity. Finally, it is important to note that Gumilev, although born in 1911, had held an academic post since 1962 at Leningrad University. Previously he was a researcher in the Oriental section of the Hermitage museum. From 1934, Gumilev was exiled to the "Gulag" for a total of seventeen years during the Stalin era and returned to normal social life only in 1956, when he was able to continue his formal academic work. As described in the following section, his offence against the state is acknowledged to have been his parentage not his activities. His father, the symbolist poet Nikolai Stepanovich Gumilev (1886-1921), was shot for anti-state activities. His mother, Anna Akhmatova (1889-1965), among the greatest of Russia's female poets, was rejected by the officially sanctioned literary establishment.

A Biographical Sketch of Lev Nikolaevich Gumilev

Born into one of the most explosive epochs of Russian history, Lev Nikolaevich Gumilev's biography reflects much of its tumultuous intellectual pathos. Born in the winter of 1911, Lev Nikolaevich was the only child of Nikolai Gumilev and Anna (Akhmatova) Gorenko, two dynamic personalities who strongly influenced modern Russian poetry. His father, the son of a naval medical doctor, had an adventurous career before his execution in 1921. The
year 1910 was momentous for Nikolai Gumilev; his first expedition to Abyssinia, visiting the city of Harrar; the death of his father; and his marriage to the lovely and talented Anna Gorenko, daughter of a naval officer. The following year he made a second journey to Abyssinia before Lev was born. On his return, according to a biographer of Akhmatova (Driver, 1972) he decorated their house with exotic artifacts collected on that trip. At first he opposed his wife's poetic work. But Sampson (1979:25) quotes his sister that he was "a tender and solicitous father," even though rarely at home.

Although only 22 when she bore Lev, Anna was no less headstrong, romantic, and adventurous than Nikolai. She spent the springs of 1910 and 1911 in Paris, a mutually exciting event for her and the artistic circles in which she moved. In 1912, she travelled throughout northern Italy. The infant Lev was left to the care of his paternal grandmother, Anna Ivanovna Gumileva, who raised her grandson in the northern town of Slepnyovo in Tver province, an arrangement not unusual in elite families of that period. Early on, Anna Akhmatova reportedly remained close to Anna Ivanovna, who was herself a strong-willed woman and daughter of a Russian Admiral (Sampson, 1979). Later, according to one of Akhmatova's biographers (Haight, 1976), it was said that Anna Ivanovna had little respect for her daughter-in-law's behavior, although most of Lev's rearing was left in the hands of his grandmother. The two women did not get along, still her biographers agree that "Akhmatova spent most of her summers in this rural retreat" (Hingley, 1981:19) ten miles from Bezketzk in Tver. His mother would have maintained close contact with Lev during his formative years, as indicated in her Poem "Bezhetzk" written in 1921:

There are white churches there, and ringing luminous ice.
The blue eyes of my son are blossoming there.
Over the ancient city Russian night is a diamond,
And the scythe of the moon is as yellow as honey.
Nevertheless, his fate was entwined in his past and parentage, illustrated by Hingley's (1981:63) account of the following anecdote:

[Marina] Tsvetayeva [a poet and friend of his mother's] also confronted Akhmatova's infant son Lev (Leo) Gumilev, now aged four, with the following all too accurate analysis:

"Red-haired lion cub
With green eyes,
You have a terrible heritage to bear."

His father, Nikolai, a Kiplingesque poet, acquiesced to Anna's desire to participate fully in the hectic poetic circles and activities preceeding the revolution, indeed, co-founding the Tsekh Poetov (poet's workshop). His work reflects strong Orientalist and African influences, as one of his recent biographers (Sampson, 1979:27-28) states,

In "Abyssinia," published in 1921, Nikolai wrote: "there is a Museum of Ethnography in this city (Petrograd) . . . I go there to touch the savages' objects, that I once brought myself from afar . . as one of the leaders of an ethnographical expedition (in the spring and summer of 1913) to Abyssinia, Gailland and Somaliland, sponsored by the Russian Academy of Science, to collect artifacts for Petersburg's Museum of Anthropology and Ethnology." To this day, on the wall of the African room in that museum there hangs a map showing the itinerary of that expedition and bearing the name of Nikolai Gumilev.

It is ironic that after his rehabilitation in 1956, Lev was appointed a researcher in the Hermitage's oriental collection, a branch of that institution.

As the First World War broke out, Nikolai enlisted in the Empress' Uhlans, was decorated for bravery and promoted to second lieutenant in the 5th Hussars. Later, he was stationed in Paris at the Russian legation, and possibly visited London. In 1916, his lengthy play Ditia Allakhu (the Child of Allah) was published and dedicated to Mikhail Larionov and Natalya Goncharova. Throughout the next two years he pursued an interest in Oriental literature, studying Chinese, Indochinese, Japanese and Malay poetry. He supported himself, however, by writing stories for an adventure magazine. "Mik," a poetic story published in 1918, for example, was a "Kiplingesque adventure set in
Africa, which at age 8, his son Lev Nikolaevich could recite by heart, according to his sister-in-law, "(Sampson 1979:29).

One can infer the influence which Nikolai might have had on young Lev. As a visionary poet, Nikolai was a significant figure in the turbulent poetic circles of the revolutionary epoch, participating with Gorky in founding a project for writers. But following the so-called Tagantsev conspiracy in 1921, a group of intellectuals and monarchists including Nikolai Gumilev were arrested and executed. It is reported that, although he was never very political, he also never concealed his monarchist tendencies. He might have been involved for the sheer adventure growing out of his need for constant romantic stimulus. Despite pleas to Lenin from many leading intellectuals, including Gorky, he was never tried or allowed to see anyone before being summarily shot. It is said that he died bravely. The stigma of his father's execution was to haunt Lev Nikolaevich throughout his life. In fact, combined with his mother's political principles and indiscretions, his father's fate was to cause Lev imprisonment and exile.

Anna Akhmatova's reputation soon outstripped the reputation of Nikolai Gumilev. She outliving him by over forty years and pursued an active poetic career. Born Anna Gorenko in 1889 on the Black Sea coast at Bol'shaia Fontana, and soon moving to Tsarskoe Selo on the Baltic coast, she also came from a naval family. Like her mother Inna Erozovna, she was quite independent, and when Anna's father opposed her publishing poetry, she responded at age seventeen by changing her name to Akhmatova, after the name of both her Tatar grandmother and the last Tatar princess of the Golden Horde. She was raised in a rather elite literary environment. Her marriage to Gumilev was brief, for they separated after Lev's birth, and finally broke up in 1917. Neither Nikolai Gumilev nor Akhmatova was strongly political and both were equally close to
both reactionary and revolutionary circles in Russia. She continued to be a romantic and symbolist poet. During her brief travels in Western Europe, she was feted in Parisian artistic circles and the subject of a famous sketch by Modigliani. Akhmatova had a wild spirit that led her through a number of affairs. After the October Revolution, she supported herself by working in the library of the Agronomy Institute and doing editorial work for various publications. Later, Anna lived in Leningrad at Fontannyi Dom with Nikolas Punin, the art historian, his former wife, and his daughter Kira. From 1930 until 1938 it would seem that this menage was more a matter of convenience, as housing was extremely scarce. They were joined in 1927 by sixteen year old Lev who came from his grandmother Anna Ivanova's in Bezhetsk to live with them so that Punin could help with Lev's education, as Haight (1976), states,

owing to the circumstances of his father's death, there had been difficulties in arranging for his (Lev's) further education. With Punin's help, he obtained a place at the school where Aleksandr Punin was headmaster (1976:82).

Finishing his course there, Lev Nikolaiavich entered Leningrad University, only to have his education interrupted in 1934 at the age of 23. On December 1st, along with thousands more, Lev was arrested following the assassination of Leningrad party boss Kirov in a plot later uncovered as having been engineered by Stalin. He was soon released, but was arrested again in 1935, this time with Punin. They were both released two weeks later, reportedly after Akhmatova wrote directly to Stalin (Haight, 1976:92). He was arrested again in 1938, but this time imprisoned for 17 months in Leningrad prison. He was sentenced to death. A reprieve came when those who sentenced him were themselves purged and shot before Lev's execution was carried out. Committed to internal exile, Lev left for Central Asia in August of 1939. As the war escalated, he was sent to the front.
Akhmatova underwent a very agonizing period. Her poems were banned and she barely managed to eke out a living as a translator. She did not know her son Lev's fate. In her agony, she composed the famous poem "Requiem." Since it was too dangerous to write down, the poem was committed to memory by her friends and was passed orally throughout the Soviet Union. "Requiem" was followed by "Crucifixion" also dedicated to Lev. Both poems became symbols of the collective fate of all the mothers whose sons were dragged away during the post-revolutionary chaos. Even consenting to a public poetry reading while passing through Moscow in 1944 on her way to Tashkent, where she was evacuated for safety during the war, cost her "a two year [writers] union-wide hate campaign and expulsion from the union" by Zhandov (the cultural commissar); who was angry at not being consulted (Hingley, 1981:238-39).

Lev Nikolevich returned home to Leningrad in 1945, at the end of the war, to live again with Akhmatova and Punin and family. After a chance visit by Isiah Berlin and Randolph Churchill who sought an interview with Akhmatova, this proscribed contact with foreigners had consequences on those close to her. In September, 1939, Punin was arrested and Lev soon after in November. This time sentenced to seven more years, Lev disappeared into the East again. Akhmatova's long-time friend Punin soon died in prison camp. Now, with only her son remaining, the rest of her friends dead, or having fled into exile, Akhmatova made the great compromise, she wrote "In Praise of Peace" a paean for Stalin, an effort which probably saved Lev's life, (Haight, 1976:159).

The great thaw following Stalin's death happened to coincide with the termination of Lev's seven years in the Gulag. The first we hear about Lev Nikolevich is in a letter written on his behalf, and in response to his mother's ceaseless efforts, by A. Fadeev, General Secretary of the Writers Union. Fadeev called Lev Gumilev, "a serious scholar... a historian and specialist
in Eastern Affairs," and identified the need for such expertise in the Soviet Union's new relationship with a developing Asia rapidly achieving independence from colonialism (Haight, 1976:163).

On May 15th 1956, Lev Gumilev walked into the Ar dov's apartment in Moscow, meeting Anna Akhmatova who had just happened to arrive, neither knew the other would be there. For a man with such a problematic political background, recently freed from internal exile, to establish an academic career and to publish was difficult. Akhmatova was still helping him in 1958 to get his first book on Central Asia published. Having spent so many years of his life in prison and exile due to his parents, L. N. Gumilev the scholar now wanted to make his own life as an intellectual in the world of Soviet academia.

Lev Gumilev's bold theoretical speculations reflect his integrity and the character and strength of his parentage. He challenged the hegemonic discourse of social determinism that dominated the discourse of Soviet history, ethnography and the new "unified" geography. In his empirical work is something of his of field experience in exile among the many ethnic currents in Central Asia. Merging with a wealth of historical readings this field experience grounded his theoretical stance.

A General Restatement of Gumilev's Thesis

Before continuing on to a more detailed discussion of Gumilev's work, here is a brief introduction to his major concepts. First, Ethnology is a natural science, constituting a separate sub-discipline within geography. Second, development within the ethnos is both social and natural as ethnos is neither organic nor social but rather an interactive whole. Third, ethnogenesis labels a process involving inertial energetic bursts absorbed by members of populations and refracted as dynamic action, transforming their
landscape as they symbiotically adapt to it. This innate drive, passionarnost, regulating ethnogenic development is a system driven by its inertial energy and subject to entropic decline, if not destruction from external factors. Allowed to proceed, the nucleus (consortium) of energized individuals forms social institutions, changes into a way of life (convixia), and eventually forms an ethnos, possibly even an amalgamation of groups known as a superethnos, before a gradual natural decline. This expansive ethnogenic process -- a synthesis between environment, culture and social institutions -- evolves a behavioral stereotype, or set of traditions, transmitted generationally within the ethnos. It is passed on through a complementarity, or embodied rhythm, allowing mutual recognition among co-ethnics. Hence, an ethnogenic group exists so long as available energy and social institutions continue to maintain the group, its landscape and its tradition in the face of external forces and entropy.

The Sequence Followed by this Study of Guilev's Work

Divided into four parts, this essay follows Gumilev's basic sequence of articles in the Landscape and Ethnos series, (parts I, II, III). This portion is followed by part IV which examines responses from his Soviet colleagues and his most recent publication, and my final conclusions. In regard to the "Landscape and Ethnos" (L & E) series, Part I deals mainly with his initial field work and methodology developed in L & E sections I through V, to which has been added L&E section VIII, and also treats several other articles by Gumilev of significance to this discussion. Part II covers the L & E series sections VI through XI, and reexamines L & E III, all of which directly concern epistemological issues in the discipline of geography. Part III examines the final sections in the L&E series, XI to XIV, following Gumilev's shift in emphasis to the structure of ethnos and ethnology.
Part I begins with a chapter analyzing Gumilev's "field based" empirical work, following a line of development beginning with his two expeditions to the Caspian Sea to explore the context of Khazar historical geography. The first expedition to the Volga delta (chapter II) identifies the ecological rise and demise of the Khazar state and its capital, Itil'. Then, in chapter III, the exploration of the Terek delta and Khazar settlement of Samandar are treated similarly. Within this frame of reference, Gumilev treats the problem of changes in nomadic and settled systems through the perspective of climate change as evidenced by fluctuations in inland water levels. The following chapter (IV) takes a short excerpt from his introduction to a theory of historical geography (L & E III), which serves as a transition between the preceding reports of field research and the following chapters. Beginning with chapter V, a chronological framework for the climatic history in Central Asia and surrounding regions is established. This development and relationship is examined from 3,000 B.C. to the end of the 1st century A.D. The same discussion is continued in chapter VI, on up to the 18th century A.D. Together, the two chapters cover the entire historical-geographic process of the rise and fall of pastoral nomadism, the warp consistent theme throughout this text.

The next chapter (VII) discusses three of Gumilev's jointly authored works which also focus primarily on Central Asian pastoral nomadism. First, Rudenko and Gumilev analyse the findings of a prominent pre-revolutionary explorer-archaeologist (P. K. Kozlov), and bring up to date the integrated methodology used in his expeditions. Second, Gayel' and Gumilev explore the relationship between methods of paleogeographic soil analysis and the sequential rhythm of nomadic and settled life in an area of the Don river basin. Finally, an article on ancient Tibetan gazetters and cartographic texts (L & E VIII) is
brought forward to this chapter, as it also concerns the aspects of methodology and empirical research treated in this first part.

Part II introduces a range of issues relating the ethnos-landscape dialectic to a geographical epistemology. Its five chapters discuss the theoretical and methodological problems of dealing with the substance of ethnos within the discipline of geography, beginning with a reexamination of "the subject of historical geography," (chapter VIII). Chapter IX, a "baseline" approach which redefined the role of this aspect of the discipline, takes on the problems posed for Gumilev's model by the concept of "unified geography." Here, Gumilev expands on the question of how people enter into a relation with nature along social, political and ethnological lines. Next, he moves to the question of human agency. Chapter X expounds a theory of ethnos as "the anthropogenic factor in landscape formation," and proposes a system of empirical generalization by which those factors can be classified. Then Gumilev's treatment of "ethnogenesis from a geographic point of view" is taken up in chapter XI. His proposal that ethnogenesis is a transformation of phylogenesis is examined in relation to natural selection and an ethnic taxonomy and the lifecycle of an ethnos. Chapter XII concludes this part by inverting the previous perspective and examining the man-nature relationship from an ethnological point of view. This view, however, assumes not only that ethnology lies within historical geography, but that it also constitutes its primary methodological raison d'être. The role of ethnos in landscape modification is viewed as a bio-social dialectic and the role of endogamy in maintaining continuity is explored through a four-phase model of development. Having examined the problem of ethnos within the disciplinary matrix of geography and rearranging some of its "cells," Gumilev now moves on to redefine ethnos, and creates, in the course of Part III a new framework for ethnology.
Part III confronts the methodological aspects of problems encountered by Gumilev in constructing a bio-social theory of ethnos as a process organized into a hierarchical taxonomic system. The discussion begins with chapter XIII, in which Gumilev asks the question, is "ethnos a state or a process?" and argues in favor of it as a process. Chapter XIV follows with a discussion of "the nature of ethnic wholeness," and the systematic structure of an ethnos according to the terms of general systems theory. He then defines an ethnos as a particular type of system, in which endogamy plays a role in the transmission of a rhythm and energetic field unique to it. Next, in chapter XV, ethnos is treated as a mutational process in terms of the methods of ethnology, as previously presented. Gumilev then constructs a model of the historical-geographic distribution of this ethnogenic process and presents supporting examples. And then in the final chapter (XVI) of this Part III of the thesis, the last article in the Landscape and Ethnos series is examined. Gumilev briefly summarizes his preceding work, continues to break new ground and presents a model in which phases of ethnic development are linked to stages of ethno-psychological imperatives. The resulting regularity is then discussed in relationship to natural selection and social development, the three processes constituting the primary factors in Gumilev's version of ethnology.

Part IV, "The Critique," begins by analyzing an article (contra-Gumilev) by his staunchest critic, the historian Kozlov, and compares both Kozlov and Gumilev's treatment of similar issues. In Chapter XVII, Gumilev, not Kozlov, is more in line with contemporary ecological thinking as it affects not only cultural geography, but also history and other social sciences. The next chapter (XVII) examines the abbreviated proceedings from a major academic seminar held at Leningrad university to discuss the debate between Gumilev and Kozlov. The discussion concluded that Gumilev was justified in pursuing his
line of inquiry as a working hypothesis, while suggesting that Kozlov represented a somewhat fossilized Marxist social determinism. Finally, the only response from Gumilev published and translated after the Leningrad critique was his application of the method to assessing the conditions under which the Greater Russian ethnos emerged. This article is treated in Chapter XIX. Here, Gumilev finds that the battle at Kulikovo Pole between the Muscovite forces of Prince Dimitry and the Golden Horde Tatars under their leader Mami, won by the Russians, was a symbolic nexus of conditions, a spark which consolidated the Slavic and other ethnic fragments, and gave birth to the Greater Russian ethnos. The crux of this argument rests on the assumption that, given sufficient data for the particular ethnic group, the historical-geographic method by which ethnogensis is the measurement of natural factors can be used to identify the exact ethnogenic event, or place and date of an ethnos' foundation. The limiting factor in this discussion of Kulikovo Pole is that Gumilev uses literary and historical sources without giving due consideration to ecological or socio-economic conditions. This concludes the sequential assessment of Gumilev's "Landscape and Ethnos" series.

The last chapter (XX) summarizes my findings and assessment of these works-in-series by Gumilev, his theory of historical geography as an integrated method, and the ethnosphere as part of the natural environment albeit interactive with social factors. Following this summary, are my conclusions on the validity of his method and its application: (1) outside of a Marxist frame of reference, (2) in areas other than Central Asia, and (3) in current situations where a reconstruction of living cultures is required. Finally, I make some suggestions on the expansion of this method into further areas of research.
CHAPTER ONE

ON KHAZARIA AND HETEROCHRONIC CLIMATE SHIFTS IN EURASIA:
TOWARDS A HISTORICAL-GEOGRAPHIC THEORY OF ETHNOPROCESSES

It [Geography] must show that the development of each nationality was the consequence of several great natural laws, imposed by the physical and ethnical characters of the region it inhabited; that the efforts made by other nationalities to check its natural development have been mere mistakes; that political frontiers are relics of a barbarous past; and that the intercourse between different countries, their relations and mutual influence, are submitted to laws as little dependent on the will of separate men as the laws of the motion of planets. Peter Kropotkin (1885:7)

Reading Gumilev Within An Intellectual Tradition

In the great intellectual tradition of Russian geography, Gumilev inquires into those "great natural laws" perceived by Kropotkin, who called for an ethnography that would be,

an instrument for developing . . . the love of mankind as a whole, . . . the feeling of sociability and solidarity with every human creature . . . [as it] introduces the necessary humanitarian element into education by the natural sciences, (1885:9).

In 1885, as Kropotkin published "What Geography Ought To Be," St. Petersburg university appointed V. V. Dokuchaiev as Russia's first professor of Geography. Two years later, D. N. Anuchin was named head of a Department of Geography and Ethnography at Moscow. Coming from a training in anthropogeography at Heidelberg, Anuchin provided the "humanitarian" counterpart to Dokuchaiev's "natural
(landscape) science." As Preston James has pointed out, "his concept of natural zones transformed by man came very close to Schluter's concept of the landscape type" (1972:288). Another colleague, A. I. Voeikov, insisted on "studying the influence of man on the environment," thus being one of the first modern geographers to "recognize and report on the destructive effects of man's use of the land," (James, 1972:286). These three pioneers studied with P. P. Semenov-Tyan-Shanski, a student of Ritter, advocate of progressive social change and explorer of man-land relationships in Central Asia, and who bridged the transition of Russian geography into its modern period.

Here we can see the deep roots of Gumilev's attempt at a synthesis between (a) man's adaptation to the landscape, and (b) man's role in changing it, as both a social and a natural being, and on the other hand insistence on ethnography's special status in geography -- a position based on Gumilev's field work and historical studies in Central Asia. By analogy, Central Asia was to Russian geographers what Latin America and the West were to American geographers, and to Americans in general. These social-natural differences continue to the present, especially in the debate over a taxonomy of regions versus one of processes and peoples. From as early as 1922, the prevailing Soviet paradigm (Saushkin, 1966:12) treated regions in economic terms:

as a link in a national chain . . . [a region] should be a distinctive territory . . . economically as integrated as possible [combining] natural characteristics, cultural accumulations of the past,

As opposed to the economic-region approach, Gumilev's process-oriented approach, in which human adaptation acts as an agent of morphological change, would, I should argue, relegate regions to a more flexible boundary status. Accordingly, the lineage of his approach to landscape character shows a significant connection to Soviet geography's "spiritual forbears," as David Hooson has suggested, and probably more so than V.A. Anuchin's unified
(regional) theme, which I would argue is social determinism wrapped within an
economistic, quantitative methodological framework.

If the corresponding, and aborted, "quantitative revolution" in Anglo
American geography has revealed the futility inherent in attempting a single
programme of measurement for all geographic problems, then we can view Gumi-
lev's stand against this trend in Soviet academic geography as progressive in a
far-sighted manner, while soundly rooted in a cultural epistemology. But as
his work is historical rather than contemporary, he draws upon the rich tradi-
tions of Russian work not only in historical geography, but also in folklore;
material culture and archaeology. The fact remains that Gumilev always corre-
lates these cultural phenomena within an environmental framework, never losing
sight of the biospheric basis of human activity, and of reciprocal influences.

One elementary aspect of any historical project is the necessary
recourse to textual evidence, the recorded perspectives of times past. In this
sense, aside from the Tibetan material (L&E VIII), Gumilev has not directly
used original sources in any sustained manner during this series. Rather, in
line with his stress on an empirically generalized method he liberally scatters
references to both original and secondary "text" sources throughout the works.
His work in this series can be viewed as moving from the concrete to the
abstract, from his own empirical observations conducted in the field, towards
greater generalization and synthesis of an increasingly broad base of data. We
now have a conceptual framework for reading Gumilev, and a basis on which to
proceed to the beginning of his work in Landscape and Ethnos and to ferret out
both the system and its historiographic significance.
Trained in the historical tradition, Gumilev began his series of articles on landscape and ethnos by stating a goal of achieving an "organic cohesion" among the techniques of orientalism and archaeological, ethnographic, and paleographic field work. I might note that the Russian school of orientalism involves philological as well as other techniques of historical and cultural investigation. This orientation was used by Gumilev in the Hermitage Museum's Astrakhan Archeological expedition (1960-63), in which he reconstructed the territory of Khazar through comparing archaeological and historical evidence of the Khazar way of life with the paleogeographic evidence of landscape morphology. He was thus able to specify both the spatial distribution of suitable habitat for a Khazar way of life and the time period within which that landscape could support such an ecological adaptation.

The stated purpose underlying Gumilev's endeavour, as reported in the first two sections of this series (L & E: I, II), appears at the end of the second article, concerning the Terek River valley. Here Gumilev states that the purpose of the report is to illustrate the method and data by which he reached the conclusion that

a functional relationship exists between a landscape and the settlement area of a given ethnic group . . . [in this case] the Khazars on the Volga and the Terek . . . conversely [investigation of] the area of distribution of ancient peoples with various forms of economy and way of life, i.e., various uses of the natural environment, [made it possible] to establish the character of climatic and other physical-geographical conditions of the study area, (1966b:25).

The purpose of this investigation was, as we have seen, to establish a more general methodological and theoretical hypothesis and test it through the process of collecting and analysing a wide range of source data on
The results of this research and a subtextual thread throughout depict the historical fate of Khazaria as primarily due to changes in the levels of the Caspian Sea, involving "alternating dry and wet cycles and their duration," correlated to macro-climatic shifts. This hypothesis was further tested in the field by the the North Caspian Paleogeographic Expedition of the Geographic-Economic Research Institute of Leningrad University and the Khazar Archaeological Expedition of the Hermitage Museum in 1963. Gumilev's empirical conclusions indicated a close correlation between the economy and the ecology of a particular historical ethnos, in virtue of which environmental fluctuations posed problems beyond the group's socio-technical and political ability to respond, and hence brought about its demise and subsequent absorption into more dynamic neighboring peoples. At this point, Gumilev has not identified "ethnos," nor defined it as such, but rather uses the more general term "peoples" to describe those populations and communities under study. It is perhaps from this study that he perceived the need for a more systematic terminology and rigorous classification of those human communities as geographic phenomena.

**The Khazars as an Object of Historical Curiosity**

The Khazars have long attracted the interest of historians and archaeologists, although not generally of geographers, their main attraction being the anomaly of their having a Jewish religious elite within a mixed population of Hunnic-Turko-Mongols, Slavs, and Iranians, (Artamonov, 1936, 1962; Dunlop, 1954; Koestler, 1976; Vernadsky, 1943, 1948). The Khazars were a heterogenous ethnos, situated primarily in the Volga Delta, Caspian Coast, and surrounding steppe. Their hegemony over a larger region extended west to the Black Sea, south to the Bab al-Adwad (Derbend) gate into the Caucasus, and east to the steppe bordering on Turkish Ghuzz and Khwarizm Iranian lands along the eastern
Caspian shore. This strategic location, straddling the trading routes of the North-South riverine traffic and East-West caravans, also placed them in an entrepot role in relation to both Byzantium and the Muslim East, and cast them as guardians against the intermittent outbursts of Inner Asian nomadic tribes and confederacies sweeping west. Of significance to their ability to hold this crucial territory was their own internal ecology, which was founded on a rich mixed economy of agriculture, fishing, stock-raising and manufacture as well as on their own commercial acumen and the lucrative 10% tax levied on long distance trade passing of necessity through their lands. A rather high level of civilization thus developed in the region between the 6th century and Khazaria's decimation by the Mongols in the 13th century.

Opinions about the origins of the Khazars in the 5th century vary according to the sources. Gumilev (1966a:54-55) challenges the traditional view put forward by Rybakov (1953:141), who "described the Khazars as a 'half-wild, nomad, predatory, and parasitic tribe that left no traces of a high material culture.'" This misconception of the Khazar habitat as the steppe was based on "a preconceived [non-geographic] notion of a steady decline of the Caspian Sea level, and consequently of its higher position in the sixth to tenth centuries" (1966a:54). But descriptions of Khazars have been revised, as evidenced by Gumilev's data. In citing Artamonov, Gumilev agrees with most other more contemporary sources, stating that

the history of the Khazars shows that they were a numerous and rich people. Their principal occupations were crop raising and fishing; livestock grazing was practised, and vineyards and fruit orchards were part of every Khazar household (1966a:54).

Therefore, Gumilev concludes that "the Khazars did not live in the dry steppe but along the shores of arms of the Volga delta," along the Caspian Sea.
As to the ethnic origins of the Khazars, Gumilev (1966a:61), states that in the fourth century, following the preceding dislocation of the Sarmatians by the Huns, "who also did not remain in the area of the Volga delta, there appeared the Khazars, a people of an entirely different type, engaged in fishing and tilling of the land." Again, citing Artamonov (1962), Gumilev describes their ethnic origins as proceeding from events that culminated in 463 A.D., [when] the Saragurs [White Ugrians, or Magyars] penetrated from beyond the Volga into the North Caspian area and defeated the Huns and the related Barsilians [Bulgars], who had settled in the area. The remains of the Huns, mixed with local Sarmatians [of Iranian stock], produced the Khazar people (1966b:16).

Having proposed a heterogenic population base, Gumilev states that in about 567, the Khazars accepted Turkic rule, and together with the Turkic tribes drove into Transcaucasia and participated in their strife. After the fall of the West Turk khanate, (through protracted civil war, according to the authority, Vernadsky, 1943:184), the Khazars founded their own khanate under the Ashin dynasty. Vernadsky (1943), also finds that the Khazar were of mixed ethnic origins, and that to the original Japhetite background, various racial strains were added through the new tribes coming into the area, such as Sarmatians, the Hunno-Bulgars, and the Ugrians. In the course of the fifth and sixth centuries one of these mixed tribes became known as the Khazars. Together with other local tribes the Khazars recognized Turkish authority... became loyal supporters of the Turkish state and gradually mixed with the Turks. By the time the western Turkish horde... emancipated itself from the main horde in Turkistan the Khazars already constituted the backbone of the North Caucasian state which soon became known as the Khazar Kaganate (1943:201-02).

In claiming "Japhetite" origins for the Khazars, Vernadsky may not necessarily refer to the later discredited theories of N. S. Marr as here he means peoples related to those of the Caucasus. While there are slight variations in these two interpretations of the historical data, they are relatively minor, both finding that the Khazars were a particular mixed ethnos which developed within...
a largely disrupted environment. They sought out and inhabited a distinctly unique landscape in a strategic location where they were successful in adapting and maintaining a mixed economy. This enabled them to gain advantages over a much larger region, as their minor but significant empire included a wide range of client and tribute peoples. The only dissent comes from Koestler (1976:21) who, in order to strengthen his position that the Khazars, as a single people, converted to Judaism and formed the basis of the majority of modern European Jewry, wants to view the Khazars as a unified "Turkish tribe, who erupted from the Asian steppes, probably in the fifth century"; the fact that the Khazars who converted to Judaism were minority, and of mixed ethnic and racial origin, does not lessen the significance, if any, of Koestler's contention that they supplied the bulk of Eastern European Jewry.

According to Gumilev (1966a:65) and Koestler (1976:127), prior to devastating 13th century raids by Kuman and Mongol forces, the Khazars were defeated by the Varangian-Rus under Svyatoslav, Prince of Kiev, in 965, or in 969, as stated by Vernadsky (1943:289). Gumilev follows Artamonov (1962:444), in claiming that it was the city of Semendar on the Terek that was sacked by Svyatoslav, while Koestler's (1976:126-27) more recent research cites other sources to the effect that the Russian Chronicles reported only that Sarkel was sacked. The latter place was the Khazars' major western fortified outpost on the Don River midway between the Azov Sea and the "Khazarian Way" portage to the Volga. That the Khazar paired capital cities of Itel and Khazaran, as well as Samandar, were conquered and sacked is also apparent in the Arabic (Ibn Hawkal) and Byzantine (Chronicles) sources. The invaders were probably not Svyatoslav's Rus', but either other Turks or Varangian (Viking) raiders coming down the Volga, (Koestler, 1976:127-128). In either regard, the inability of the Khazars to defend their rapidly flooding landscape, and the
corresponding destruction of the basis of their way of life, were bringing about an natural end to their state and its hegemony in the region.

The case of the Khazars has recently become publicized following Koestler's (1976) popular and controversial study of their history as Jews and progenitors of East European Jewry. While drawing from academic sources, he failed to note Gumilev's elaborations on Artamonov's work, nor did he achieve the same depth as studies by Artamonov (1936, 1962) or Vernadsky (1943, 1948). Koestler's main focus was the enigma of a Turkish kingdom converted to Judaism in the 9th century and subsequently his contentions that their descendants engendered the majority of Eastern European, and hence of the world's present, Jewish population. While this may well be true to a great extent, it is of little significance for either Gumilev's research on the Khazars as a unique ethnos, or in the environmental factors that led to their demise, both of which are used in constructing Gumilev's argument for ethnogenesis as an explanatory model of historical geography. Koestler's (1976:195) conclusion that there is no "Jewish race descended from the biblical tribe," (which is perhaps correct for many other reasons as well), does not contradict the nature of a Jewish ethnos, which in Gumilev's model would consist of a combination of non-genetically inherited and acquired behavioral stereotypes irrespective of racial and somatic characteristics. In fact, Koestler's treatment of the Jewish diaspora and the Khazar role in the evolving Jewish ethnos could well be analysed and explained according to Gumilev's hypothesis, as Koestler (1976:199) demonstrates in the anthropological evidence for the wide diversity of Jews with regard to physical character and their similarity to the Gentile population amidst whom they live...the obvious biological explanation for both phenomenon...miscegenation, which took different forms in different historical situations: intermarriage, large-scale proselytizing, rape as a constant legalized or tolerated accompaniment of war and pogrom...
In light of Gumilev's thesis, we might view Koestler's work as unknowingly opening a distinct research path where Gumilev's theory could be applied and from which would emerge a more accurate explanation of the Jewish ethnogenesis, dispelling any scientific or scholarly claims of race and any basis for racism. The problem here would be one of discovering corresponding evidence from the physical environment to substantiate any ecological influence upon social events leading to the various ethnogeneses of Jewish peoples. If, however, one includes the evidence for a heterogenous origin of the Oriental Jews from a large Judaized Arab and Aramaean population before the time of the Prophet Muhammed, combined with the subsequent conversion to Islam of many Jews and the migration of others to older Jewish settlements within the Levant, as proposed by Crone and Cook (1977), then we have created a potential link between the demise of a Jewish ethnos and its partial absorption into a rising Arab-Muslim ethnos. Such an approach sidesteps the problem of strictly formal intellectual relationships between Jewish symbolism and socio-religious performance and similar tendencies in Islamic practices. A convergence emerges between Gumilev's larger theoretical message and other studies, (Koestler, 1976; Crone and Cook, 1977, Crone, 1980, etc.), which could lead to a better understanding of that ethnos; given, for example, Koestler's conclusions that the lingering influence of Judaism's racial [i.e., chosen tribe] and historical message, though based on an illusion, acts as a powerful emotional break by appealing to tribal loyalty. It is in this context that the part played by the thirteenth tribe [i.e., in both myth and the fact of the Khazars] in ancestral history becomes relevant to the Jews of the diaspora. Yet . . . [it] is irrelevant to modern Israel, which has acquired a genuine national identity . . . [thus] the native Israeli 'Sabra' represents, physically and mentally, the complete opposite of the 'typical Jew' bred in the ghetto (1976:226).

I should point out the minor significance of their Jewish segments for the overall ethnogenesis and historical ethnogeography of Khazaría. The broader inquiry into Khazaría, beyond the curiosity of the Jewish component, has long
focused on the geographical nexus between the Ancient Hellenic, and consequent Byzantine realms, the early Slavic ethnogenesis, and the continual waves of Iranian followed by generally Turkic steppe peoples. What Gumilev has done is to generalize these varying interests into a more comprehensive, ecological orientation towards the geographical factors which influenced the Khazar ethnogenesis and subsequent historical interaction with surrounding peoples and their social, cultural and religious systems. Gumilev's approach thus emerges from a general problem to focus on peculiar aspects of some historico-geographical population, and is directed towards both a more comprehensive methodology and a taxonomic system within which a dialectic between the particular and the general may develop a more effective historical geography.
CHAPTER II

ON KHAZARIA AND THE CASPIAN SEA

This section focuses on Gumilev's study of the effects that long-term change in environmental factors had on the unique set of ecological "niches" occupied by Khazaria. Gumilev's methodological synthesis correlates archaeological and paleogeographic evidence with other sources, indicating that fluctuations in the Caspian sea level had dramatic impacts on the cultural, political and economic shifts within this landscape during the 6th to 10th centuries. The study also takes up the problems inherent in purely historical research as represented by Artamonov (1962), a recognized authority on Khazar history. Gumilev cites Artamonov's (1962:412) comment that as of 1962, "the exact locations of the principal cities of Khazaria, Itil' and Semender, have still not been established exactly," and although the boundaries of its khanate "were quite well known," the exact territory of the Khazar people still was not known. As Gumilev (1966:54) points out, "the problem of the ethnic origin of the Khazars and their area of distribution involves difficulties that historians are unable to overcome." This is partially explained by the fact that the Khazar language was lost, and has yet to be reconstructed. Hence, the archaeological expedition in which Gumilev was involved undertook to find the answers from a perspective of physical artifacts.
An Analysis of the Data

Presenting a highly detailed report of the Leningrad University's North Caspian Paleogeographic Expedition's archaeological work and correlated historical and paleogeographic evidence, Gumilev (1966a:55) demonstrates that the solution to the Khazar mystery is closely related to fluctuations in the Caspian Sea level, [as] a shoreline has been indentified at the -32 meter level [below mean sea level], i.e., 4 meters below the present level... [with] indications of a lower previous level... cited by L. S. Berg (1949:205-79)... [and] strong evidence of a lower Caspian level in the first millennium A.D. was cited by B. A. Apollon (1951, 1954) and Shnitnikov (1954).

The investigations referred to consisted of verifying the times and sea levels with actual artifacts representing datable and identifiable ethnic strata, and are reported in detail by Gumilev (1966a:55) as initially consisting of

an [underwater] visual survey of the ground plan of the... Derbent wall, built in the sixth century by [Sassanid Shah] Khosrau Anosharvan, depth measurements, and establishing the character of the stonework... The wall extends from the present shoreline 300 meters into the sea and ends in the ruins of a tower, whose foundation of large dressed stones rests directly on bedrock... at a depth of 4 meters [amphora-like vessels]... serving as water containers for the defenders... show that in the sixth century the -32 meter level was above the waterline... [the] data contradict in part the information supplied by tenth-century Arab geographers.

Gumilev concludes that by the tenth century, the Caspian Sea level had already risen almost to its present level (-28.5 or -29 meters). In fact, this level is close to the one computed by Apollon (1954) for the year 1234... [and] its rise occurred... in a known period... probably at least 200 years, [thus], in view of the sudden character of the Caspian Sea level fluctuations, we can assume that the rise in level by 2.5 to 3.0 meters already took place in the tenth century, causing Arab geographers to wonder how such a big wall could have been built at such a great depth (1966a:58).

The rising Caspian Sea level was, therefore, part of a growing, multi-dimensional, climatically induced, environmental hazard affecting the viability of Khazaria, which Gumilev describes as having
had tragic consequences for Khazaria, as it lost its richest lands and became weakened to such an extent that it was conquered. Changes in the physical-geographic conditions, of course, were not the sole factors in the collapse of Khazaria, but they must be taken into consideration (1966a:58).

The main thrust of this research, however, goes beyond the fate of Khazaria, as Gumilev uses the data to develop a model of environmental change and corresponding social impacts based on shifting climate patterns. He begins by citing the work of V. N. Abrosov (1962), who established, 

the difference in time relationships in the supply of moisture to the humid and arid zones of Eurasia," [and] who has made it possible to compare climate fluctuations with the historical destinies of nomad peoples and with the fluctuations of the Caspian (1966a:58).

Based on Abrasov's findings, Gumilev is now able to build his first model of environmental influences on ethno-processes, which is stated as follows:

... the Caspian receives most of its water (81%) from the Volga, which flows out of the humid zone; a rise in Caspian Sea level coincides with desiccation of the surrounding steppe, and the greater filling of the Aral Sea and Lake Balkhash with water from arid-zone streams corresponds to relative desiccation of the Middle Russian Plain (1966a:58).

But the question arises as to what causes this alternating fluctuation in moisture between the two regions (humid and arid). For the answer Gumilev again turns to Abrasov, stating that

for the complete picture, we must consider three rather than two possible paths of cyclones carrying moisture from the Azores high into Eurasia: a southern path through the arid zone, a middle path through the humid zone, and a northern path through the Arctic zone (1966a:58).

The following figure (Fig. 1.) shows the relationship between cyclonic paths and climate. Secondly, Fig. 2. shows the predominance of cyclonic paths from the 3rd century B.C. to the 20th century A.D. and their effect on the Caspian Sea level.
Figure 1. Relationship between Cyclonic Paths and Climate or Water Level

<table>
<thead>
<tr>
<th>Cyclonic Path</th>
<th>Northern</th>
<th>Middle</th>
<th>Southern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artic zone climate</td>
<td>humid</td>
<td>dry</td>
<td>dry</td>
</tr>
<tr>
<td>Humid zone</td>
<td>dry</td>
<td>humid</td>
<td>dry</td>
</tr>
<tr>
<td>Arid zone</td>
<td>dry</td>
<td>dry</td>
<td>humid</td>
</tr>
<tr>
<td>Caspian Sea level</td>
<td>low</td>
<td>high</td>
<td>low</td>
</tr>
<tr>
<td>Amu-Darya runoff</td>
<td>high</td>
<td>low</td>
<td>high</td>
</tr>
</tbody>
</table>

Source: Gumilev, 1966a:60.

Figure 2. Caspian Sea Fluctuations and Europe's Climatic Conditions.

Legend:
in left margin = elevation of Caspian Sea level in meters
heavy line = level fluctuation from 3rd century B.C. to 20th century A.D.
numbers 1 through 14 = known elevations of Sea level
from the bottom:
1st line: roman numerals designating centuries
2nd line: humid and arid conditions in Arid Zone.
3rd line: humid and arid conditions in Humid Zone.
4th line: cyclonic paths - 1 = northern; 2 = middle, 3 = south
(humid conditions = vegetation symbol; arid conditions = sand symbol)

Source: Gumilev, 1966a:60.
Together, the preceding two tables illustrate the model which Gumilev develops to explain certain kinds of social activities set into motion by environmental factors, thus:

the varying degrees of moisture affected the natural environment and consequently the economy of the peoples settled in the wooded steppe of Eurasia. Nomadic tribes with a natural economy reacted most sensitively to climatic fluctuations. Abundant moisture offered prosperity and permitted the establishment of powerful Khanates and victorious military campaigns; desiccation forced tribes to abandon long-occupied areas and to seek refuge along the northern margins of the steppe (1966a:59).

While this ecological explanation fits well into a reactive model of environmental hazards, Gumilev holds firm to a synthetic and systemic approach. He also attempts to avoid the pitfalls of environmental determinism, stating that "in comparing the data of physical geography and political history, we can fill in the gaps in the former and explain mysterious events in the latter."

Giving an example of how this synthetic approach works, Gumilev discusses the problems encountered in the Khazar project, and explains how the climatic information both assisted in clarifying archaeological information and focused field research in certain directions. He also describes how the archaeological evidence confirms the climatic hypothesis, and moreover, helps to shape the ecological model from which the ethnogenic hypothesis developed, as

migrations of the first millennium A. D. were not always recorded and were never fully and precisely described, the only way of verifying available sources is to carry out archaeological investigations of a vast area to establish cultural changes (1966a:59).

Applying this principle to the Khazar situation, Gumilev speaks for the Expedition, stating that they knew the Volga delta had not been subject to such investigations, but expected that all cultural layers prior to the 14th century rise in sea level would be buried under sediment and hence inaccessible. But despite this fact for all the low-lying areas, what they found were unexpectedly rich sites on elevations not covered even during the high water mark of - 20
meters (14th-15th cent.); "the so-called Behr hillocks, parallel ridges of... clayey sands first described by... K. M. Behr in 1856."

The artifacts discovered on these ridge sites led to two sets of findings: first, that of cultural continuity in layers; secondly, that the Khazars had established their principal settlements on such ridges. Responding to the first set of finds, Gumilev (1966a:59) states that the expedition discovered three groups of artifacts corresponding to three historical eras: Sarmatian... [1st cent.]; Khazar and the contemporaneous Turkic Ghuz culture... [5th cent.]; and the [13th - 16th cent.] Tatar culture... each [of which] arose from a certain type of economy and reflected the physical geography of the period.

Comparing the findings with known historical facts, (citing Aleksin & Gumilev, 1963; Grum-Grzimaylo, 1963; and Gumilev, 1960), they found that they could judge changes in landscapes from the character of the cultures... [i.e., they inferred that] at the turn of the Christian era, climate in the steppe zone of Eurasia was relatively humid. Nomadic stock herders prospered... [and] occupied huge territories that later turned into deserts. It was a period of prosperity for nomad cultures... [thus] monuments of Sarmatian- Alan culture have remained from that period in the lower reaches of the Volga... (indicating that) the population of the lower delta and the adjoining steppe undoubtedly formed a single whole in Sarmatian times (1966a:59).

Gumilev can now generalize that "the cultural unity in turn suggests uniformity of landscape since the material culture of a natural economy (sic. pre-industrial) is a function of the natural environment." As to what are the implications of this concluding suggestion, I would suggest that as the seminal statement in this series, the dual uniformity of both culture and landscape implies a symbiotic relationship. Conversely, when either factor yields evidence of a disunity, the other is also affected. From this implied proposition, Gumilev will later construct the hypothesis that, in order for an ethno- genesis to occur, two or more landscape and ethnic components must be present, i.e. representing a disturbance of the "natural" tendency towards a homeostatic relationship between culture and landscape. With this in mind, Gumilev's use...
of a climate-moisture-landscape-culture model to construct a historical geography of the region becomes clear.

Gumilev next finds that an environmental shift caused the Sarmatians to either change their way of life, or migrate further into the steppe, as the humid zone underwent a period of desiccation . . . and the Volga flow was low, a large part of the present delta consisted of rolling steppe occupied by the same nomads as the surrounding areas . . . [followed by] a desiccation of the arid zone [which] began in the second century and reached its maximum in the third . . . [as] the Caspian Sea level rose to (-34 to -32) meters. The Volga carried a larger volume than could be contained in the existing channel and therefore formed a delta of the present type (1966a:61).

But this shift also opened the opportunity, or niche, for the Khazar culture to develop in the new conditions of a greatly expanded delta and coastal ecology.

What Gumilev implies here is a notion that population movement and cultural change resulting from an environmental shift are inherently linked, and in turn can result in an ethnogenesis, in this case that of the Khazar ethnos. Here, what Gumilev later terms an ethnogenesis, is implicitly stated in what Gumilev (1966a:61) states are its historical-geographic conditions and consequences, as in analysing our observations, we start from the incontrovertible assumption that in an era of natural [pre-industrial] economy the distribution of a people's closely related to the landscape that feeds it. The Sarmatians who had occupied the steppe were displaced in the third century by the Huns, who also did not remain in the Volga delta. In the fourth century there appeared the Khazars, a people of an entirely different type, engaged in fishing and tilling the land. The period of the fourth to ninth century is one of steady moisture supply to the arid zone. Consequently the humid zone was relatively dry and the Volga retreated into the multitude of channels formed in the preceding 200 years. This gave rise to a delta landscape unsuitable for nomad life. It was a green island amid the surrounding steppe as described in a Khazar-Jewish document of the tenth century: "Our country does not have much rain. It has many rivers with an abundance of fish. It also has many wells. The country is fertile and rich, consisting of fields, vineyards, orchards and parks. All are irrigated from rivers" . . . (Kokovstev, 1932:87, 103). The word "island" in the medieval Arab literature was also applied to clusters of trees in the steppe and to any kind of enclosed space.

This latter description comes from a letters exchanged between the Khazar

Written towards the end of Khazar rule in a period of rising Caspian Sea level, the term "island," as in the passage, "I live within an island. My fields, vineyards, orchards and parks are within the island," takes on a stronger significance, especially in light of the Khazar archaeological sites. Gumilev, in concluding that the "archaeological work of 1960-63 made it possible to define the limits of Khazaria," states that

Khazar monuments are concentrated in the central part of the Volga delta between two delta arms . . . [their] burial places with artifacts were found on the Behr hillocks . . . [while] remains of settlements . . . were found on nearby hillocks. But the Khazars occupied the hillocks relatively late, when the rising water level of the Caspian began to flood low-lying parts of the delta. Earlier settlements were situated farther down near the water. One was found . . . 15 kilometers offshore, in a shallow reach. Dredging of a navigation channel yielded Khazar . . . [materials] from a layer at an absolute elevation of -29.6 meters. Since the settlement was in the plain and wind driven waves reach a height of 2 meters, for security the water level must have been at least -32 meters, which in fact it was in the sixth century (1966a:61-62).

Historical sources, whether textual, archaeological or environmental, all correspond in describing the conditions of both Khazar development and demise.

Further archaeological evidence of Khazar ecology and a correspondence between rising sea levels and settlement locations, moving up from the base of ridges to their peaks, comes from the second area which the expedition excavated on the Terek River, farther south along the Caspian's west coast. As Gumilev describes the findings from this part of the exploration, the analogue of the Behr hillocks in the Terek delta is

the so-called burun, a sandy upland . . . [which] encloses the valley in which the river meanders . . . here too, our assumption of the link between ethnic distribution and landscape was confirmed: the entire southern margin of the burun is literally covered with Khazar ceramics. The population density in the sixth to tenth centuries was apparently greater than in the 19th century when the Cossacks were settled there (1966a:62).
In comparing the findings from the two sites, Gumilev makes this conclusion:

The Khazars thus occupied areas both on the Volga and on the Terek that were unsuitable for the nomad way of life. In both places fruit growing, hunting, and fishing were the principal occupations. It was evidently their fishing interests that drove . . . [them] to the lower reaches of the Terek and along the coastline of the Caspian Sea . . . then 4 meters below the present level . . . [hence they] could have advanced from the Terek to the Volga only along the Caspian shoreline, now under water. The dry steppe was not attractive . . . [to them, and] no Khazar monuments have been found in the Kalmyk steppe. But the similarity of natural conditions in the Terek and Volga deltas made it possible for the Khazars to develop both areas as suited to their economic and living habits (1966a:62).

The concluding statement above has significance for Gumilev's further development of a theory of ethnogenesis as a combined natural and social response to changing historical-geographic conditions. Here we find the seeds of his later theoretical statement that an ethnogenesis involved an adaptation both to and of a specific environment, creating a bond between an ethnos and its landscape as a behavioral system. Furthermore, Gumilev (1966a:62) pursues the link between archaeological culture and landscape, [and tries] to solve a problem in historical geography -- delimitation of the boundary of the Volga Khazars and, at the same time, the paleogeography of the Volga delta, [and establish] the natural boundary of the Khazars in the east . . . [as] the sandy desert of western Khazakstan.

Although the core area of Khazaria was primarily centered on the Volga delta in the northern tip of the Caspian, its hegemonic and political influence extended much farther. Nevertheless, Gumilev states that currently, in the vicinity of the Kigach arm, the elongated brackish lakes [found today] between the Behr hillocks, were probably an arm of the Volga during the 10th century, and as the Kigach is rich in fish and its adjoining meadows are covered with green grass, offering a suitable area for settlement . . . [and as enough] ceramics from the eighth to tenth centuries were found on a hillock at -18 meters elevation . . . in the semi-desert adjoining the delta plain, [and] around the mud hills in the Azau area . . . we can therefore conclude that the population of this area was relatively dense . . . [but] the steppe was not occupied by Khazars since the ceramics resemble the Turkic type that ranges from the Baykal area to Turkmenia and is also found at Sarkel, where the garrison is known to have consisted of nomad mercenaries (1966a:63-64).
Asking why the Khazars allowed their allied or tributary tribes to occupy this open pasturage rather than using it for themselves, Gumilev concludes from paleographic evidence that in the sixth-ninth centuries, when the Caspian Sea level was at \(-32\) meters, huge areas covered with vegetation were laid bare [from sea water] making it possible for the Khazars to graze their stock and fish in the delta arms and in the shallow reaches off shore. Although the Caspian coastal plain extends far to the east, it was not occupied in its entirety by Khazars. In the area of the Dzhambay bank, now laid dry, meadows gave way to semi-desert, where only nomads [Ghuz, Pechenegs, Polovtsy] could have found sustenance. These steppes were quite suitable for stock herders because they were covered with fresh vegetation in spring and autumn and did not suffer from insect pests as the river valleys did (1966a:64).

Encountering an anomaly in this explanation of the Khazar boundaries, Gumilev addresses the problem of an easterly caravan trail leading "northwards through a desert area known as Ryn Peski [Ryn Sands]. Finding ancient wells along the way in shallow depressions, and, at one point, ceramic fragments of all types and periods: Bronze Age, Sarmatian, Turkic, Tatar," etc., it appears that the trail was used both before and after the existence of Khazaria." Questioning why it was used as an alternative to the Volga River route, Gumilev (1966a:64) concludes that it effectively bypassed a burdensome "transfer of loads from land to water and the hazardous navigation in the delta arms, where many shallows caused a rapid flow." Placing the eastern boundary of the delta landscape farther to the west in the 6th to 10th centuries, Gumilev concludes that it lay between the central Behr hillocks and those more to the east in the Azau area of Kazakhstan, at the present Sumnitsa Shirokaya stream, as Khazar archaeological material is only found to the west, and none to the east.

Regarding the western boundary of the Khazarian landscape, Gumilev found that the delta did not extend as far west as at present, and archaeological remains "west of longitude 48 degrees East are entirely of Tatar origin."

Gumilev presents the data and conclusions, as follows:
in the third to fourth centuries [or, time of Khazar ethnogenesis] the western margin of the delta was a rolling dry steppe, a continuation of the [present] area of brackish delta lakes [which did not exist then, but appeared in] the next change in the landscape [which] took place at the end of the thirteenth century as a result of the Caspian transgression . . . the sea level [having risen] to -20 meters . . . no Ghuz ceramics from the seventh to tenth centuries have been found below the -18 meter mark (1966a:65).

Having explained the development of the eastern and western boundaries of the Khazarian landscape, and the ecological basis for the development of a Khazar way of life, or the natural factors in the Khazar ethnogenesis, Gumilev now correlates this process of landscape transformation with the Khazars' gradual demise. In the ninth century, as the cyclonic path shifted south to its middle range, bringing increased rainfall and runoff into the Caspian, the rise in the Caspian level and the flooding of the Volga radically changed the situation of Khazaria . . . delta arms becoming navigable for the shallow bottom boats of the Russians, who started to penetrate the Volga towards the Caspian in the tenth century, causing disputes with the Khazars. Secondly, land area in the delta was reduced as fields, orchards, pastures and shallow fisheries were flooded. The population sought refuge on the Behr hillocks to escape the flood. The economy of Khazaria collapsed (1966a:65).

Correlating the recorded socio-historical impacts of this environmental hazard, to use a contemporary term, and his archaeological and paleogeographic data, Gumilev is able to reconstruct the first historical-geographic model of Khazaria's decline and final demise. As Gumilev (1966a:65) describes it,

In the middle of the tenth century . . . the Caspian level was at -28 meters. This meant that they had lost two-thirds of their territory and resources . . . [and] could not move or expand into the adjoining steppes which were occupied by the hostile Ghuz, allies [at this time] of Svyatoslav of Kiev, who went to war against Khazaria in 965. The defeat of the half-flooded country was inevitable. Having defeated Khazaria, the Russians left, but the Ghuz occupied Khazaria for some time . . . the remaining Khazars appealed for aid to Khwarazim, and obtained it at the cost of conversion to Islam. This is what saved them. When the sea rose to -20 meters and flooded the remaining Khazar settlements in the delta and the Volga flooded the settlements in the floodplain, the descendents of the Khazars found refuge in Saray, the capital of the Golden Horde, and merged with its ethnic conglomeration. Through their Moslem faith they automatically became Tatars, the name given to all loyal subjects of the Great Khan.
Concluding his description of the historical-geographic factors involved in Khazarian rise and fall, Gumilev turns to the issue of locating its capital city, Itil'. He disproves Rybakov's (1952) hypothesis that the site of Itil' was the present hilltop location of the stronghold Chertovo gorodishche, (described in the sixteenth century as controlling trade along the new Volga channel cut into its Caspian delta during the Sea's rise in elevation), because sea level data would have made the fortress stand on an island. Moreover, his archaeological investigations found "no Khazar layer on the hill," while the fortress' construction of Tatar brick and other evidence pointed to its brief existence before "its destruction in 1395 by Timur." In fact, Gumilev's "theory of the westward migration of the Volga channel" is supported by a concentration of Tatar sites in the west contrasted to "Khazar sites grouped in the central part of the delta." Gumilev explains why Tatars did not settle in the central area: first, they fished only for their own needs, "so the fish catch was relatively small;" and second, because they built fortified settlements to "control trade routes," and the dangers of raids by nomadic Nogai precluded "settlements outside the fortresses, [as] the delta only became safe after the Russians made an alliance with the Kalmyks and expelled the Nogai hordes."

In closing this initial discussion of Khazarian landscape and ethnos with some "concrete conclusions" Gumilev summarizes the results of this synthetic method combining "data from historical geography, paleogeography and paleo-ethnography," concluding that:

1. The Khazars were a settled people inhabiting the lower reaches of the Terek and the Volga, areas now partly flooded by the Caspian Sea.
2. The present-day delta landscape was created in the first millirium A.D. The western part of the delta was formed after the transgression of the thirteenth century, which was also the time the Kigach arm wandered toward the eastern delta.
3. The destruction of the Khazak domain was related not only to political and social factors, but to the natural transgression of the Caspian.
Based on these conclusions, Gumilev makes the following general comments:

1. The economic systems of peoples inhabiting the northern shores of the Caspian Sea, and consequently their historical destinies, were closely linked to the level of moisture supply to the arid zone and thus to the level of the Caspian Sea.
2. Research into the historical destinies of peoples inhabiting the Volga delta makes it possible to deduce climatic and landscape changes and the level of the Caspian Sea.
3. The use of the timetable of political history yields an absolute time scale for recent geological processes. Such a method could be fruitfully applied to other areas where landscape changes are associated with the settlement of peoples whose history is known in at least its general aspects (1966a:67).

What has been expressed here is the conservative beginnings of Gumilev's road to a historical-geographic theory of ethnos. Drawing on solid empirical work in a situation with clearly known geographic and temporal limits, Gumilev's hypothesis points to research into even more complex processes of ethnos and landscape. Using this method, these ethnoproceses can be situated within a larger framework of a historical geography of changes in the anthroposphere, as a unique aspect of general conditions in an evolving biosphere. The next chapter examines results from the Terek expeditions.
CHAPTER III

ON KHAZARIA AND THE TEREK RIVER

In the previous article derived from the work of the Hermitage Museum's Astrakhan' expedition (1960-63) on the landscape and ethnos of Khazaria, Gumilev developed a synthetic theory and method in which he established a functional relationship between phenomena of physical geography and paleo-ethnology based on the history of Central Asia and the archaeology of the Volga delta (Gumilev, 1966b:14).

Having analysed his work in that first article, we now turn to Gumilev's description of the (1963) joint expedition of Leningrad University and the Hermitage Museum to study the North Caspian paleogeography and Khazar archaeology. The purpose of this second expedition was partly to field-test conclusions of the prior expedition, which Gumilev states as follows:

1. The historical fate of the people under study, having been the result of its economic activity, was linked directly to the dynamic state of the environment.
2. The archaeological culture of the given people, representing the crystallized traces of its historical fate, reflects the paleogeographic state of the landscape of a period that is subject to absolute dating.
3. The combination of historical and archaeological materials makes it possible to judge the character of the surrounding landscape during the study period and, consequently, the directions of its changes. Conversely, the availability of data on climatic fluctuations, and thus on changing relationships between landscapes, makes it possible to search out monuments of long-lost peoples.
4. Such an approach makes possible a historical geographic synthesis, on the basis of which one can make forecasts having economic significance" (1966b:14-15).
The last of these conclusions provides an interesting point at which to begin an analysis of the project. Only in one other work does Gumilev use the term "forecast," (at least in translation), that is, in his most recent (1980:115) article where he discusses motivation in terms of the "ideals, or long term forecasts," which a group of people place "above personal interest or whimsical caprice." Do these two instances have more than a semantic relation? I do not think that they have any intrinsic relationship to his model, except if he is implying that forecasts of economic significance are ideals that can motivate people towards a sense of common purpose which he views as potentially triggering a burst of ethnocentric energy. Still, under constraints of a prevalent Soviet economic bias in geographic research it is possible that Gumilev refers here to a kind of rational economic planning around either environmental hazards or ethno-cultural aspects of collaborative projects.

Several other key phrases appear in these four points which establish a transition from the prior conclusions to testable hypotheses and provide a link to Gumilev's later ideas and underlying philosophies. First, while explicitly grounding the "historical fate" of any particular ethnos in economic, and hence social movement, he also stresses its invariable connection to a landscape, or the "dynamic state" of a specific environment, thus acknowledging the equal importance of the motion of natural factors in determining their history. Second, in Gumilev's use of the term "crystallized" to refer to the "traces" of a people's living energy, there could well be an analogy to Vernadsky's (1945, p. 1) concepts of an energetic based biosphere, and the term seems important as both metaphor and key to the notion of energy as the basis of ethnos, which threads through the entire project. Third, he stresses an interplay among the various modes of the approach, in that, changes in the crystallized forms of social production and reproduction can be discovered through analysis of the
natural phenomena affecting its environment and vice versa. This again emphasizes the necessity of considering the interaction of both forms of motion of matter in an analysis of objective material conditions in any situation and indicates a dialectical method. But when alluding to the notion of forecast, Gumilev proposes more than a method integrating evidence from material culture, natural environments and documents to develop a historical analysis, he implies a broader scope in which to apply the method, but basing potential indicators of social or environmental shift on a firm foundation in a synthetic history. Finally, Gumilev states the importance of reproducing the first study at a second site in order to demonstrate that "these conclusions not only applied to the local situation, but also had universal application beyond the confines of the Volga delta." Choice of the Terek river site corresponded to the Volga research, as its archaeological potential had not previously been explored nor any known Khazar monuments discovered there, although historical records reported it to be the earliest known homeland of that people.

Field Research in the Terek River Valley

Here, Gumilev demonstrates by empirical evidence how a combination of unique historical circumstances and environmental conditions merge isolated ethnic fragments into a particular ethnmos. Correspondingly, the ethnmos is worn down and fragmented by socio-environmental changes, to disappear or be absorbed by other peoples. The Khazars, as the subject of investigation, are now traced to their landscape of origin, as "all historical sources" are in accord that the broad Terek valley was settled by the Khazars . . . in the 5th and 6th centuries [and] this country was known as Barsilia and, in view of the Byzantine chroniclers Theophanes and Nicephorus, it was the homeland of the Khazars. It was also on the banks of the Terek that the rich city of Sewender was located, to be later destroyed by Svyatoslav . . . [possibly in 965, and thus] they inhabited this region for at least 400 years (1966b:15).
Not all historical sources, however, are in accord about whether Svyatoslav destroyed Semender or the western outpost of Sarkel, as Koestler (1976:127) proposes from a new interpretation of the sources. Moreover, Koestler regards the Khazars as

appearing on the European scene about the middle of the fifth century as a people under Hunnic sovereignty, and together with the Magyars and other tribes as a later offspring of Attila's horde . . . [their] language was supposedly a Chuvash dialect of Turkish . . . [and] the origin of the name Khazar . . . most likely . . . is derived from the Turkish root "qaz" - to wander, and simply means nomad (1976:21,23).

Furthermore, Koestler locates the first capital of the Khazars at

the fortress of Balanjar in the northern foothills of the Caucasas; [and] after the Arab raids in the eighth century it was transferred to Samandar, on the western shore of the Caspian; and lastly to Itil in the estuary of the Volga (1976:51-52).

Along with Gumilev, Koestler and other scholars all recognize that both Itil' and Semender were destroyed probably by Rus', possibly by Turks, and yet not all agree with Artamonov that either was sacked at the hands of Svyatoslav.

More importantly, Gumilev is the only scholar who has actually brought forward archaeological and environmental evidence to support his interpretation of textual and documentary sources, not only adding weight to his analysis, but also providing the first comprehensive historical geography of Khazaria. On this basis, the crucial fact regarding Khazar ethnogenesis is their settlement in the Terek valley and ecological adaptation to a particular landscape. Whatever social processes involving state and religion or strategic advantages developed because of their location, it was the ecological factor which established the framework for their growth, survival, and ultimately, their demise. Gumilev avoids environmental determinism by recourse to balancing these natural phenomenon with historical-political facts.

Describing the physical-geographic difficulties encountered in locating "the Khazar settlement region exactly," Gumilev states that
like any river flowing in a latitudinal direction, the Terek wanders through a broad valley flooding parts of the surrounding steppe . . . [which] made the surrounding terrain unsuitable for settlement, especially in the [moist] 1st millennium A.D . . . [thus] Khazar settlements had to be situated in the middle reaches of the Terek . . where . . . sand dunes border the valley on the north and provide protection against flooding. The margins of this sandy area are now settled by the Grebenskaya Cossacks who, like the medieval Khazars, were winegrowers, hunters, and warriors (1966b:15).

This latter fact of similarity in modern settlement and economic patterns, despite different socio-technical conditions, will become important later on.

The actual valley watershed, however, combines

four micro-landscapes along the left bank of the Terek: (1) dense forest, (2) dry steppe, (3) sandy desert, and (4) reed-covered flood meadow . . . (while) it can be assumed that the relationships between these micro-landscapes change over a period of 2,000 years . . . archaeological finds make it possible to trace the character of such changes (1966b:15).

Demonstrating the corollary to the principle that cultural unity indicates landscape unity, Gumilev assumes that the actual uniformity of a landscape suggests uniformity of culture, and, correspondingly, that the relationships between landscape and culture would change at each period. Therefore, in reconstructing the layers of landscape and culture in the Terek valley,

four cultures succeeded one another . . . after the 1st century: the Sarmatian - Alan culture [2-400 A.D.], the closely related ceramic culture of the Khazars, the Nogay, and the Russian. The Sarmatian-Alan-Khazar culture . . . is represented by two sites in the steppe zone: one [near] Shelkovskaya, the other near Kordonovka . . . both are located on oxbows of the Terek River . . . [but] differ in layout, in type of pottery, and in their situation (1966b: 16).

Both sites are ruined fortresses, but pottery discovered at Kordonovka is of two types having "their analogues in Sarmatian pottery of the 1st and 2nd centuries," and "the fortress site is in a broad plain formed by sediments of the Terek river in the upper part of its delta." In comparing the two sites, Gumilev states that the fortress site at Shelkovskaya yielded pottery analogous to that of the settled people of the Saltov culture, "whose ethnic
character is still disputed" (Gayel' and Gumilev, 1966:584), and was erected later than Kordonovka, which stands in a flat plain and is subject to flooding, [so] consequently, its founding must date back to a dry period in the arid zone, i.e., the 2nd - 4th centuries, when the Alan fought the Hun and needed fortresses . . . [Thus] during the dry period of the first few centuries of the millenium, the lower reaches of the Terek were suitable for settlement, but this became impossible during the following wet cycle [5th - 10th centuries]. At that time the Khazars, who were then inhabiting the Terek valley, moved to the margins of the Nogay sandy desert, where we now find traces of settlement and large quantities of pottery . . . of two types . . . characteristic of Khazar burial places on the Volga where both types occur . . . deeper in the sands, along the second ridge of dunes, there is only the later Nogay pottery . . . [while] burial places were found . . . of a type . . . analogous to those . . . types . . . found on the Stepan Razin mound in the Volga delta (1966b:17-18).

In order to provide the "historical interpretation," which is required by archaeological data, Gumilev cites historical studies by Artamonov (1962) and Minorsky's (1963) work on Arab geographic sources, which enable him to state that the Khazars, descendents of Hun conquerors and Sarmatian women, lived in the country of Barsilia . . . situated in the steppe between the Terek and the Volga . . . side by side with the Barsilians, a Bulgar tribe, that later merged with the Khazars . . . Although these tribes differed in language, religion, customs and, maybe, in their physical type, they followed a similar way of life and consequently used identical pottery. It is therefore impossible to distinguish them on the basis of ceramic finds. However, these finds yield approximate dates (1966b:18).

This interpretation then enables Gumilev "to arrive at two major conclusions": first, which site is the location of the historical city of Semender, and second, that "the flowering of the Khazar people falls within the period of increased moisture supply in the arid zone," providing an ecological and chronological correlation to their ethnogenesis and demise.

The first conclusion is reached through comparing descriptions of Semender in Arab geographic sources, (primarily Ibn Fadlan, Al-Istakhri, Ibn Hawkal, al-Masudi and Yakut), with the archaeological findings. Citing
Zakhoder (1962:179), and Artamonov (1962:399), Gumilev can state that, the city of Semender was "situated on lake, or seashore . . . contained many gardens and vineyards . . . was huge, but dwellings were tents with wooden structures and arched roofs . . . [and] built by Khosrau Anusharvan," i.e., by Persian engineers of the 6th century (1966b:18).

Based on this description, "only the Shelkovskaya site" could match, since flooding of the Terek River could have, and even must have seemed to form a lake to the Arab traveller. Vineyards are even now found there. The wooden dwellings could not have been preserved, and all we have left is the mud-walled citadel that barred the way to the Arabs into Khazaria. Hence the name: Saman-dar = adobe gates (1966b:18,20).

Gumilev rejects two other possible sites. First, he repudiates Minorsky's (1963:144) suggestion that "the Persian geography text Hudud al-Alam places Semender in the northeast corner of the Caucasas, south of Makhachkala," which is disputed by all other sources, including Artamonov and Koestler. Secondly, it could not have been located on the Caspian shoreline, as stated by Zakhoder (1962:181) and repeated, without citing his source, by Koestler (1976:51), because as Gumilev states

a consideration of physical-geographic conditions in the 6th century . . . [proves that] the Caspian sea . . . was four meters below its present level, so that the shoreline could not have been "two farsakhs from Serir," i.e., the mountains of Dagestan, as stated in the source [Zakhoder's reading of Ibn Hawkal and al-Istakhri] (1966b:20).

Regarding the second conclusion, that the Khazar period corresponds to one of increased moisture, Gumilev found that,

the Khazar monuments were found along the banks of streams on elevations which suggests a settled mode of life and the threat of flooding, [but] it can be assumed that the Khazars also grazed their livestock in the steppe, just as the Grebenskaya Cossacks [their descendants?] and Astrakhan' Tatars later did, but that does not mean that they had to become nomads (1966b:20).

Furthermore, Gumilev, citing Artamonov (1962:396,457) and his own (1962:85, 102) interpretation of remains from different Khazar burial sites, states that the Khazars included three subethnic groups:
(1) real nomads, Turks of the Ashin Khanate; (2) a ruling elite of urban, commercial Jews; but (3) the Khazars themselves [the core population] were agriculturalist, fruitgrowers and fishermen, with some marginal stock raising, and as such they survived the political collapse of their state in 966, continuing to tend their vineyards, catch fish, and graze their livestock (1966b:20).

This statement, which holds up well in light of most other sources, contradicts Koestler's (1976:23,72) expansion of what the early Russian chronicles state, claiming that the majority of "real Khazars" were Turks who converted to Judaism. Koestler goes on to propose that in a Khazar "mini-diaspora," they became the nucleus not only of most eastern Eurasian Jewry, but also a significant part of the Magyars who, "in the second half of the ninth century... received that critical blood-transfusion from the Khazars" (1976:102-04). He must, however, have partly agreed with Gumilev that some Khazars remained "in situ," as he cites several instances of historical contact up to Carpini's report in 1246: first, a report from Ibrahim Ibn-Jakub probably writing in 973 who describes the Khazars as still flourishing... [secondly], an account in the Russian Chronicle of Jews from Khazaria arriving in Kiev AD 986, in their misfired attempt to convert Vladimir to their faith... [and, third], a joint Rus-Byzantine campaign of 1016 against Khazaria, in which the country was once more defeated... reported by the twelfth century Byzantine chronicler Cedremus... and in 1030 a Khazar army is reported to have defeated a Kurdish invading force... and still powerful in the town of Tmutarakan in 1079 etc. (1976:129-31).

This chronicle by Koestler supports Gumilev's statement that the disappearance of a people does not mean the death of all its members... [and that], a decrease in the moisture supply of the arid zone, linked to a rise in the Caspian Sea level to the -20 meter mark deprived them of the possibility of continuing their usual way of life, and the Khazars are no longer mentioned in the historical sources after the 13th century. The last one to mention them was Plano Carpini who met them in 1246. The banks of the Terek were then occupied by steppe dwellers, the nomadic Nogays, who were subjects of the khans of the Golden Horde (1966b:20).

While Koestler (1976:133-180) would like to see the Jewish elements of Khazaria as an ethnically united group and thus "the true Khazars," while
viewing the Muslims, Christian and others in their kingdom as ethnically different, the historical facts and his own arguments on race and myth do not support this hypothesis. Furthermore, he proposes that these Jewish Khazars migrated into other active urban areas throughout the greater region of Central Eurasia, bringing Jewish culture, a Hebrew alphabet, administrative, mercantile and martial skills to Poland, Hungary and Kiev, among other places. This is not the place to argue this proposition, but in general I would support his contentions, except for the facts that Jewish Khazars never represented a majority of the ethnos, and that they were also ethnically mixed and continued to mix with other ethnoses in the areas to which they migrated. While not contradicting Gumilev's theory of landscape and ethnos, which proposes a demise of an ethnos with changes in environment, I assume that these former Khazars would have been both of relic and fragmented types of ethno units.

As to the diaspora of the Khazars and their demise into small, relic settlements, I would again support Gumilev's proposition that

the disappearance of a people does not mean the death of all its members ... [and emphasize his contention that] An ethnic group is not the arithmetical sum of its members, but the algebraic sum of relationships among its members, and between them and their surroundings -- neighboring peoples and the natural environment. This is a dynamic system and a disruption on any single component disturbs the rest (1966b:20).

Gumilev arrives at a conclusion, which I also support, that

when the Khazars were no longer able to carry on their customary modes of life in the 13th century, they broke apart. The Volga Khazars adopted Islam and assimilated with the Tatars of the Golden Horde. The Jewish upper class disappeared without a trace; very likely to avoid extermination, they fled to the Caucasus, where they merged with their co-religionists, the Mountain Jews ... [As] in the Middle Ages, the fate of people depended on their profession of a religious faith and, therefore, the Khazars who were Christian had to seek out their co-religionists. They found them in the Brodniki, who lived on the Don River (1966b:20).

With the exception of the Jewish segments, whose fate is traced more fully by
Koestler and actually falls outside of the article's focus, Gumilev's explanation accords with both known historical and archaeological sources, and in the case of those Khazars who fled to the Brodniki, allows him to make the following proposals as to their fate:

the Brodniki were a people of mixed origin, Russian speaking and of the Orthodox faith. Until 1117 they lived together with the Belovzhtsy, the Russian population of the city of Sarkel [on the Don River]. After the Belovzhtsy, having been expelled by the Polovtsy, returned to Russia [northwest towards Kiev], the Brodniki remained in control of the Don floodplain, which they were able to defend against the Polovtsy. Apparently, some of the Brodniki were of Khazar origin, and it was only to their ethnic relatives and co-religionists living on the Don River that the Terek Khazars could have fled. They brought with them the adobe brick technique, which was used to build a settlement on the ruins of the old Rus' town of Belaya Vezha, and herds of sheep, which served both as a source of food and as sacrificial animals. The hostility of the Polovtsy drove the Brodniki into alliance with the Mongols. In 1223, the Brodniki helped Subutai defeat the Russian princes, and thereafter they were loyal subjects of the Golden Horde. In the 16th century, they were already known by their Turkic name, Kazak, or Cossacks (1966:21).

On one hand, an argument could be made that Gumilev is attempting to trace a particular "root" ethnos through its historical permutations, as Koestler attempted with the Jewish Khazars. But on the other hand, Gumilev's concern is foremost methodological, developing and expounding an explanatory theory based on a dialectical or reciprocal relationship between the social and environmental factors involved. In attempting to demonstrate a significant correlation between landscape and ethnos, Gumilev continues to chronicle the development of the Don Cossacks, both in terms of their relevance to identifying and dating archaeological data from the fortress sites and to their adaptation to changing climatic conditions and ecologies of the Caspian shore, Terek and Volga River valleys and deltas. In his words, and including quotes from Aleksin (1963), Gumilev states that,

the strengthening of the Cossacks and their eastward movement were also related to climatic phenomena. However strange it may seem, the Cossacks were helped by the desiccation of the steppe. It should be
recalled that the main enemies of the Khazars, the Brodniki, and the Cossacks, were the nomads of the steppe, the Polovtsy and the Nogay ... [cp.], in 1538 ... [a ruler of] Moscow wrote: "there are a lot of Turkic Kazaki in the steppe, from the Kazan, Azov, the Crimea and other outlaws. And our Russian Kazaki, Cossacks, are also mixed up among them." ... Subsequently, the struggle against the steppe nomads became the specialty of the Cossacks, who had assumed the role filled earlier by the Khazars. Dessication of the steppe disrupted the stockherding economy of the nomads, just as it previously caused the decline of the Khazars. This caused the nomads to weaken and since the strength of their opponents remained unchanged, the balance of power went over to their side. By the second half of the 16th century, the Cossacks were in control of the Terek valley (1966b:21).

Turning to the Tatar period of history, Gumilev identifies the fortress at the Kraynovka site by the following indicators: pottery shards, "analogous to the Golden Horde pottery of the 14th - 17th centuries"; the type of construction; and its style. As the pottery evidence is too vague, Gumilev (1966b:21) sought other, "more precise methods of dating," as did Ye. I. Krupnov (1935), who was the first to describe the site, dating the fortress as from the 16th to 18th centuries." Based on the following reasons, Gumilev rejects these dates, and Krupnov's interpretations for them, concluding as follows:

A basic feature of the fortress is the presence in the walls of a huge quantity of saltwater mollusks ... The absolute elevation of the top of the walls is -19.3 m. Consequently the Capian Sea level must have extended just above the walls, creating favorable conditions for mollusk life. The fortress itself bears the imprint of incompleteness ... and the 45 cm. cultural layer examined by Krupnov within the fortress contains pieces of brick, slag, charcoal, pottery, fishbones, and only a few bones of domestic animals ... [and therefore] on the basis of the foregoing, it must be concluded that the fortress was built before the transgression of the late 13th century by people who ate fish and were more skilled in the use of the potter's wheel than the Volga Khazars of the 6th to 10th centuries (1966b:22).

Having presented his evidence, Gumilev now proceeds to identify this site and why it cannot be the remains of Semender, already identified as the previous site at Shelkovskyya, not the second, or later site near there, which is discussed after Gumilev's interpretation of the Kraynovka site, as follows:
Consequently, the walls were erected before the end of the 13th century, but in the Tatar period, i.e., after 1241. We evidently have here one of the outposts of the Golden Horde, built for defence against the Ilkhan dynasty...[and] since the theatre of operations moved rapidly to Transcaucasia, the fortress was not completed and was soon flooded by the sea. The low-lying meadows also became unsuitable for grazing because of the rising waters, and the pottery of the 13th - 14th centuries is found only in the sands along the middle reaches of the Terek. By the 16th century, as a result of a Caspian regression, the lower reaches of the Terek again became available for settlement, this time by Russian Cossacks, who built the Teki fortress (1966b:23).

Here, Gumilev introduces another comparative variable, a second fortress of this type, also "situated near Shelkovskaya in dense forest on the banks of the Terek...most probably dating from the 17th-18th centuries."

This time, having already examined the method and previous conclusions, I will skip the data, going directly to Gumilev's tentative conclusion that the fortress site is related to the settlements on the outer margins of the dunes and represented an outpost pushed toward the banks of the Terek during a dry period of the steppe zone, i.e., in the 17th century. No similar structure could be found upstream and downstream over a distance of 80 km. (1966b:23).

The significance of this fortress and the following further conclusions derived from its examination tie in closely to Gumilev's continuing hypothesis that given similar landscape conditions, similar modes of economic behavior and adaptation will occur among the ethnic groups present, considering, of course, differences in the developing sphere of socio-technical organization. Gumilev presents these final conclusions about the lifestyles of the Terek's new (17th century) settlers, and given the environmental conditions:

The fortress of Kizlyar dates from 1734. By that time the Grebenskaya Cossacks had taken the place of the Khazars, and the Nogay and Kalmyks the place of the old Bulgar tribes. The relations between the nomadic and settled populations remained unchanged, just as did the relationship between steppe and riverine landscapes (1966b:25).

This completes Gumilev's exposition of the Khazar field expeditions and their working hypotheses, methodologies and successful interpretation of the core
Khazar an landscape, ethnos, culture, and succeeding ethnic occupations and comparable ecological adaptations under similar environmental conditions. He can now legitimately claim the following results:

Our investigation bears out the thesis that a functional relationship exists between a landscape and the settlement area of a given ethnic group. Only on that basis were we able to discover archaeological remains of the Khazars on the Volga and the Terek and, conversely, we used the area of distribution of ancient peoples with varying forms of economy and way of life, i.e., various uses of the natural environment, to establish the character of climatic and other physical-geographic conditions of the study area. The most important factors were the alternating dry and wet cycles and their duration. It can [therefore] be concluded that relationships similar to those observed in the Caspian lowland can be found in any part of the world, although they will, of course, vary for each region (1966b:25).

From these conclusions, Gumilev stakes out a claim on following up this research process in other situations, and evolving his working hypothesis through two immediately following articles within this extended series. As he puts it, "the most precise data on the duration of these periods can be supplied only by historical information, subjected to certain methodological refinements, that will be the subject of the next article." At this juncture, I have made a crucial editorial decision in terms of how best to present the development of Gumilev's larger theoretical model. As a result, this chapter will be immediately followed, not by the next article in series, but by the two consecutive articles on heterochronic climates which follow it. The "methodological refinements on the subject of historical geography," promised by Gumilev follow a continuation of his empirical discussion on macro-climates and their long-term effect on Eurasian landscapes and ethnoses.
CHAPTER IV

ON METHODOLOGY, HETEROCHRONIC CLIMATE AND STEPPE ETHNOGENESSES

Environmental Influences on Ethnogenesis
An Introductory Discussion

Each ethnic group establishes its own distinctive relationship with
the geographical environment and the landscape sphere it inhabits,
(L. N. Gumilev, 1966c: 24)

The preceding chapters analyse environmental and social impacts on
the Caspian Sea landscape and on its Volga and Terek river deltas. They also
introduced the concept that macroclimatic shifts in the cyclone belt were
factors in the alternation of humid and arid conditions across the Eurasian
landscape and fluctuations in the levels of inland waters. But in this next
work in the series, "On the Subject of Historical Geography," (1966c) Gumilev
sets out a number of new theoretical propositions. Because some of those
propositions relate directly to both the preceding work on Khazaria and to the
following sections on heterochronic climate, it can not entirely be separated
from either. Perhaps this is implicit to the series, and yet, neither all its
articles nor all of the present discussion on historical geography fit neatly
together. Nevertheless, it becomes necessary at this point to discuss this
third work of the series, not for sequential reasons, but in order to bridge
concepts introduced in both the Khazaria work and the following sequence on a
climatic chronology of the Eurasian steppe. But on the other hand, to provide
a stronger focus and context for Gumilev's more explicitly epistemological and theoretical propositions argued in that work, discussion of issues relating directly to the discipline of historical geography appears out of sequence as Chapter VIII. His argument for an integral definition of landscape and ethnogenesis in historical geography will be discussed in the context of epistemological and theoretical issues within Soviet geography as presented in Part Two. Hence, those elements of Gumilev's theory of historical geography presented in this chapter relate directly to his empirical study of climate and ethnology of the Eurasian steppe, and the preceding discussion of field work in Khazaria.

In addressing the problem of sequence, several of Gumilev's other works which will be treated in Chapter VII merit mention here. First of all, following the chronology of the Eurasian moisture supply in which Gumilev develops a model of its effects on ethnogenesis from the 3rd millennium B.C. to the 18th century A.D., I have combined three secondary articles as Chapter VII. Bearing directly on this initial methodological discussion and its empirical basis, they represent three jointly authored works, only one of which appeared in the L&E series: first, "P. K. Kozlov's Archaeological Investigations in their Historical-Geographic Aspect," (Rudenko and Gumilev, 1966e); second, "Soils of Various Ages in the Steppe Sands of the Don and the Migration of Peoples in Historic Times," (Gayel' and Gumilev, 1966); and third, a textual analysis of "Two Traditions of Ancient Tibetan Cartography," (Gumilev and Kuznetsov, 1973d). The first two come from outside the L&E series but provide important further examples of the integrated method.

In the first work, Rudenko and Gumilev discuss the methodological approach used by an early 20th century archaeologist as integral, but limited, by its historical context. They then apply a more advanced form of integrated method to reinterpret those findings. Gumilev's co-author, the well-known
archaeologist and interpreter of Eurasian Steppe cultures, S. I. Rudenko, provided the theoretical basis by which the emergence of pastoral nomadism could be identified as a particular epochal juncture of landscape and ethnos. The second work by Gayel' and Gumilev both complements the Khazarian fieldwork and links it to the chronological tables that follow the next two chapters. It also broaches issues of integrating field work in physical geography and archaeology, historical sources and other empirical data within a synthetic method. The authors further use this method to analyse soil strata as a chronological indicator of a succession of steppe cultures and corresponding environmental quality. In their article on soils and migration, Gayel' and Gumilev are able to correlate climatic and anthropogenic factors indicated by deflation in sequences of buried soils that they examined on the old river terraces along the Don. By analogy, this research on river sedimentation is equivalent to Gumilev's earlier field work on the Caspian shorelines.

The last article, eighth in the series, proves difficult to discuss in that sequential context. This study of ancient Tibetan manuscripts (maps and gazettes) is Gumilev's only significant treatment of original texts as sources in this series. Co-authored with Kuznetsov, a Tibetan philologist, it represents an important indicator of the integrated method as used by Gumilev to interpret other primary documents and secondary sources. Only one other published work by Gumilev (1966d), "Les Mongoles du XIIIe Siecle et le Slovo o Polku Igoreve," works primarily and directly with literary sources. As Halpern (1985:176) warns, this Kievan saga of Novgorod prince Igor Sviatoslavich's campaign in 1186 against the Polovtsians may be a forgery. Nevertheless, Halpern finds Gumilev's "allegorical" interpretation of the work, a rather interesting approach. So also do Fennell and Stokes' (1974:205), who refer to "Gumilev's ingenious thesis [i.e.,] that the 'Slovo' is an allegorical work
written in the mid-thirteenth century." Originally published in 1962, Gumilev's (1966d) comparison of the tale of Igor's campaign to the equally controversial saga of the battle of Kulikovo field (Zadonskchina), seems to provide some basis for his (1980) work on Kulikovo as the triggering event in the Greater Russian ethnogenesis, as discussed in Chapter XIX. The first three articles, however, will be more thoroughly discussed in Chapter VII, closing out Part One of the research and leading into Part Two, Gumilev's theory of historical geography and epistemology.

A Theory of Historical Geography Emerges From A Synthetic Method of Climate, Landscape and Ethnos

In discussing the subject of historical geography and comparing different definitions, Gumilev arrives at a synthetic method introduced under the label of "ethnology." Defining ethnology, i.e., the study of ethnos, as the study of the "ethnic character of a group of people," who represent the changing natural population divisions in the species, H. sapiens, Gumilev states that ethnos also comprises "a certain environment covering the earth's land surface" (1966c:29). Even though it is a "fact that this environment is not continuous," Gumilev dismisses this problem by comparing it to "the way in which V. I. Vernadsky (cf. 1945), posed the problem of the "biosphere." In this regard, he asks us to again revise our notion of ethnos, and to consider it as an element of the biosphere, and thus as a natural process. Moreover, negating all the standard criteria of ethnos, he finds that

There is no criterion for defining ethnic character as such although there has never been and is not now a human individual without ethnic character. . . There is, however, one permanent, universal criterion of ethnic affiliation, and that is the personal recognition of every individual that "we are such-and-such, and everyone else is different . . . [Though] it reflects a certain physical effect and has some physical meaning . . . what is important is that [ethnos represents] a measuring stick of historical geography. In physical geography,
the measuring stick is landscape, which determines the way in which people can make a livelihood. For them a given landscape, the one to which they are accustomed, is the encompassing landscape (1966c:29).

Having now proposed an ethnological method founded on the same natural science criteria as Vernadskiy's biosphere and providing an indicator (measuring stick) that works in tandem with its physical counterpart, Gumilev also establishes an analogy between a particular ethnus and its encompassing landscape. Consequently, based on this concept of ethnus, he is able to define historical geography as "the science of post-glacial landscape in its dynamic state, for which ethnus is the indicator" (1966c:31).

Gumilev avoids any deeper analysis at this point as the discussion of his theory of ethnus evolves throughout the entire series of articles. Moreover, his basic theoretical proposition should now be clear. In fact, he claims to have eliminated "the need for assessing the effect of the geographic environment on the historical process," by establishing an approach in which the phenomena of interest to us [ethnos] are not counterposed to the environment, but are part of it. [And] this part of the environment is the most sensitive to any global influences, and therefore any changes in it make it possible to judge the character and even the magnitude of climatic fluctuations, alternations of wet and dry cycles, etc., with exact datings (1966c:31).

Gumilev established an integrated method in which ethnus is both a highly sensitive indicator of landscape change and a natural phenomenon subsumed in the landscape, and hence a part of the biosphere. But, equally important, is that ethnus provides "a common denominator for a vast number of historical and geographic phenomena," a commensurability whereby one indicator may be used to measure the other. That is, if ethnus can indicate the condition of "the landscape in its dynamic state" and thereby shed light on physical geographic conditions, conversely, "the landscape as a measuring stick of the physical environment" may also indicate the condition of the ethnus it encompasses.
One issue that is continually important to point out is that Gumilev constantly refutes environmental determinism. While stressing that "landscape and ethnmos affect each other," he finds it "silly to apply the influence of the geographic environment to all aspects of the historical process, as was done by the advocates of geographic determinism." Therefore, while presenting the landscape and ethnmos model as a fully reciprocal process, he avoids confusing these different processes by a simple procedure for deciding which factors to include in a primary classification, i.e.,

All we have to do is make a classification of phenomena, decide which aspect of the historical process is related to physical geography and landscape science, determine the distinctive patterns of relationships, and not mix them up (1966c:31).

Reciprocity between the two indicators of natural conditions, landscape and ethnmos, is co-related to a separate set of social indicators about which Gumilev is less explicit at this stage. He does, however, discuss human agency as "undoubtedly of great signiﬁcance for the landscape," citing a range of historical examples in which "various peoples affect the environment in different ways." Moreover, because of this wide diversity in human agency, it is not fruitful to pose the question in a generalized fashion. At the same time it must be borne in mind that we can observe only the results of the integration of changes in natural conditions plus the activity of ethnic groups, and that the reconstruction of the role of one or the other requires retrospection, which is always very difficult, though not hopeless. However, care must be taken to avoid direct reliance on historical sources because these discuss events in uneven and selective fashion (1966c:32).

On the basis of these observations, Gumilev concludes that

the only reliable basis for reconstruction is a canvas of facts of identical scale, arranged in a chronological table. Such a table reflects historical reality with the greatest precision (1966c:32).

The above passage might well be seen as launching the theoretical discussion of landscape and ethnmos, but more immediately it addresses the problem of hetero-chronic climate. In Gumilev's view, a primary classification of landscape and
ethnos is best constructed by establishing a chronological table that correlates fluctuations in the moisture supply of the Eurasian steppe to social progress and ethnic development. From this classification he attempts to reconstruct a historical geography of pastoral nomadism and ethnic processes in the Eurasian steppe.

By constructing a chronological table of events, and evaluating which elements follow a primary classification, Gumilev criticizes both strictly historical approaches and chronologically isolated methods of research. To illustrate the advantages of a synthetic approach as developed within a chronological classification, Gumilev compares its practice with those of the other two methodologies. Giving examples of their inherent problems, he demonstrates the difficulties encountered in a clash between the two methodologies . . . [in] the well-known argument [between L. S. Berg and G. Ye. Grum-Gzhi maylo] about the direction of climate change in Central Asia. [In the first instance], Berg (1947) held that there was a trend towards moisture increase, and Grum-Gzhi maylo (1933) towards désiccation (1966c:33).

This discussion of methodological problems will be treated in more detail in chapter VIII, but Gumilev's conclusions are presented here as they bear directly on the present analysis of his climatic model.

In comparing the problems encountered in this methodological difference, Gumilev (1966c:33) concludes that "reliance on historical sources without regard to preceding and subsequent events," can lead to errors which can be uncovered only by repeating the research by the synthetic methodology. . . [Therefore], to avoid a confusion of concepts, a primary classification is essential. Since the historical fate of the people under study is the product of its economic potentialities, it is thus related to the dynamic state of the encompassing landscape. Here two possibilities arise: either the people adapts itself to the natural conditions, or it adapts the conditions to itself. Even in the second case . . . such an adaptation takes place only once during the entire period of existence of each people. Once that gigantic transformation was accomplished, there remains only maintenance of the encompassing landscape without further basic changes (1966c:33).
Based on this foregoing methodological discussion, and as the analysis to follow will show, it is obvious that the preceding assumptions underlie Gumilev's argument for a synthetic method. This method begins by organizing data from historical-geographic sources into chronological tables wherein, for the following discussion, the data will be categorized according to a sequence of climatic effects on landscape and ethnos. Gumilev (1966c:33), however, finds that "one final condition is needed to make our investigation successful." That is, the interaction between landscape and ethnos, while observable everywhere, is most clearly viewed "at the boundary between forest and steppe," where the humid and arid zones meet. His focus on "the Eurasian steppe and its nomadic population" is explained by the fact that it provides "the most suitable research materials."

To explain "the concept of encompassing landscape" for Central Asia, Gumilev found that despite a multiplicity of changes in every facet of the population and its historical conditions,

there has always been a difference in cultures between the eastern and western parts of Central Asia... evident in almost every aspect, ethnographic characteristics, the breakdown of languages into dialects, in the arts and in the character of the political system and that can be traced over a period of 2,000 years. During this period there was a change in the racial [sic, see Ashley Montague, Concept of Race] make-up of the population, e.g., Indo-Iranians were replaced by Turko-Mongols; there were changes in stages of development, as the clan system made way for military democracy and feudalism; there were changes in the level of technology and economy, as agricultural settlements reappeared several times in the steppe, but the relationship between eastern and western areas of settlement remained unchanged throughout (1966c:33-34).

Not only has Gumilev found an important split within this large-scale landscape, but he has also discovered a double "hearth" where the two divergent sub-systems meet and from which they diverge. But the boundary does not, according to Gumilev (1966c:33-34), run
along the continental divide of the Altay, Tarabagtay, and the outliers of the Tien Shan, but farther east, roughly through the middle of Dzungaria, with the Hangay region falling in the eastern part.

Moreover, among the cultural factors dividing eastern from western Inner Asia, Gumilev also found that in the area of political systems,

centralized power was typical of the east, and confederation and decentralization typical of the west, regardless of the particular stage of development of productive forces and production relationships (1966c:34).

Finding similar differences along linguistic lines, e.g., in Turkish and Mongol dialects, he was also able to expand upon Grum-Grzhimaylo's (1933) convincing demonstration that "the breakup of the Mongols into eastern and western groups was based on political considerations and was unrelated to their clan composition." But as to Grum-Grzhimaylo's corresponding assertion that "there were no other reasons that broke up the Mongol mass into two antagonistic worlds," Gumilev found subsequent research to show a number of other changes which correspond to this east-west rupture and consequent drifting apart. For example, as Gumilev (1966c:34) argues, not only did the Western Mongols undergo linguistic change, but

if the breakup had been only political, the east-west boundary would hardly have remained the same over a period of 2,000 years. Evidently, there must have been a permanent factor that did not affect the historical process, but did affect the character of ethnogenesis.

Furthermore, Gumilev goes on to argue that the ensemble of social traits and ethnic characteristics differentiating eastern and western regions has a geographical, i.e., environmental, basis. He concludes, therefore, that these combined environmental factors produce

two-ethno-psychological syndromes that create a desire to divide and break up the ethnos since the social way of life determines consciousness, including its ethnic aspects. But if this is so, then the regional boundary must also be reflected in natural phenomena (1966c:35).

Having demonstrated the existence of both geographic differences and their
boundary, he excuses prior scholarship for missing it, because

the displacement of the line of development, determined by that influence, was so insignificant that it was quite justly ignored in the compilation of world history and was not mentioned by Orientalists in their particular investigations. Nor did geographers give attention to this division, since the natural conditions in the two regions are virtually identical (1966c:34).

In this part of his argument, it may seem contradictory that "natural phenomena" reflect a boundary between regional differences while "natural conditions" in both regions were identical. It is precisely the range of those conditions and how these two sets of similar natural phenomena differ in their composition and organization that, as Gumilev explains it, give way to two recognizably distinct landscapes. The key premise in this argument, to wit, that the maintenance of an ethnic boundary over any substantial period of time must be based on "a preeminent factor that did not affect the historical processes, but did affect the character of ethnogenesis," is fundamental to Gumilev's position throughout this work beginning with the east west split in Dzungaria. As we continue the assessment, this premise becomes modified to show that the character of both landscape and ethnogenic activities affects historical processes, and conversely, can be affected by the historical, i.e., human agency as social action. Recognizing that there are discernible differences in physical elements of the landscape, e.g., in geomorphic, geochemical, and biotic systems, Gumilev selects the changing atmospheric conditions as a baseline for organizing the other data according to a historical analysis of climatic shifts. Keeping within Vernadskiy's concept of an all-encompassing biosphere, all of these landscape factors, including the "sociosphere" of human agency, are encompassed within the "dynamic field of nature." Gumilev then explains how these interacting landscape factors set the basis for differences in ethnic and socio-economic fields by using a sequential model of change to

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construct a chronological table with the climatic regime as its primary variable. Therefore, to demonstrate that the primary factor influencing the east west boundary is climatic, Gumilev, (citing Kaminsky, 1915 and Alisov, 1950), draws our attention to the Central Asian cyclonic track, a “distinct type of cyclonic activity virtually unrelated to the effect of the oceans.”

Gumilev’s dissertation on climate is predicated on the well established assumption of a unique cyclonic activity over the Eurasian steppe. He now discusses, how the variability of these cyclonic tracks is relevant to the east west division, thus setting the basis for his subsequent chronological treatment of Eurasian steppe history. The path of this cyclonic belt directly affects the distribution of moisture throughout the inland continental mass, shifting in latitude to affect humid and arid regions differently and maintain a difference between eastern and western regions. Gumilev (1966c:34-35) is able to demonstrate the significance of these different regimes for the two regions by first examining, "the atmosphere and the character of the moisture supply in eastern Kazakhstan and in Mongolia," finding that

in winter, a powerful high-pressure system settles down over northern Mongolia. It accounts for the dominance over eastern Central Asia of continental air masses, whose physical properties are close to polar. Snow is virtually non-existent . . . [This] system makes it possible for livestock to graze year round. . . [but] in summer, eastern Central Asia is heated by insolation, which gives rise to tropical continental air over deserts and steppes. The polar front moves into northern Mongolia. The interaction of the two physically different air masses, namely polar continental [Siberian] and tropical continental, produces a distinctive type of cyclonic activity . . . the storm tracks of summer cyclones . . . run north of the Altay mountains and the Tannu-Ola range. In the warm period of the year, when eastern Central Asia lies in the area of a diffused low-pressure area, the center of the summer low lies in the southern part of the Asian continent, so that East Asian polar air, or rather Siberian humid taiga air, moves southward across Mongolia towards the central low. This accounts for summer rain which makes up 80-90% of all precipitation.

In contrast to this eastern climatic picture, the one which “prevails in the western part of the steppe” is quite different, as Gumilev (1966c:35) states,
that area has virtually no precipitation at all in the summer, while Atlantic cyclones produce a snow cover in winter. That is the big difference . . . [Though] not sufficient to produce differences in the form of livelihood . . . or the type of stockherding . . . conditions do create a different emphasis on the economic activities of the Khalkhas and Dzungarians. In Mongolia, livestock spend most of their time grazing in the steppe which makes possible active social intercourse among the herders. In the Tien Shan and the Tarbagatay the stock is driven in summer to mountain pastures, each of which belong to a certain clan. This gives rise to certain habits that, in sum, affect at first the tribal organization and, later social tendencies. This produces two ethno-psychological syndromes that create a desire to divide and break up the ethnus since the social way of life determines consciousness, including its ethnic aspects.

Having demonstrated his point in the preceding data, Gumilev also asserted one of his most important concepts up to this point. He presents a communications theory that not only influences, but underlies the entire landscape and ethnus project. That is, within this ecological frontier area created by climatic variations, two styles of stockherding, as a primary and economic relationship, arise as an adaptive response to the different ecological variables. These adaptive styles involved different modes of social communications. As these two primary landscape adaptations evolved, they followed separate paths in their ways of life, social development, expansion, diffusion, migration and response to patterns of large-scale environmental change. But most importantly, at the base of their separate adaptive evolutions was a fundamental divergence in communications and "ethnostyle," as Leroi-Gourhan (1966), terms the similar differences he discovered in his archaeological reconstructions of neolithic sites. From this seed, Gumilev is able to reconstruct the entire historical geography of the Eurasian steppe, accounting for an evolutionary divergence based on two distinct inertial forms of energy and the subsequent patterns of ethnic behavior engendered by their further expansion and adaptations to social and natural conditions.
Integral to the hypothesis which emerges from Gumilev's intricate but sweeping argument, is an implicit acknowledgement that: (1) ethnos is a natural division of our species (H. sapiens sapiens), (2) it exists as a part of the biosphere, and (3) interacts with social and natural forces in the form of innumerable ethnogenic events. Moreover, each ethnos has its own natural life cycle and potential, based on its level of successful response to the objective material conditions which it encounters. But to support this initial argument, Gumilev requires of his model a substantive classification system by which a logical and chronological relationship can be established between the phenomena of regular climatic variations as a primary variable and the natural and social phenomena, or events, constituting the historical geography of Eurasian landscapes and ethnoses, as the dependent variables. Therefore, as we have discussed earlier, if his hypothesis about these "two ethno-psychological syndromes" is correct, then as Gumilev (1966c:35) states,

the regional boundary must also be reflected in a natural phenomenon. That is actually the case, namely in the division between two geobotanical boundaries, the Mongolian and the Dzungarian-Turanian [citing Lavrenko, 1966:15,66]. This boundary assumes real meaning if we consider the distribution of precipitation: the fact that in the meridional zone of interest to us, precipitation is below 100mm a year, the same amount as in the Tarim valley and in the Alashan steppe.

Having confirmed his hypothesis with corroborating data from other aspects of the ecosystem in question, Gumilev (1966c:35) now makes the following two conclusions:

Our regionalization of the ethnosphere has physical meaning and is closely related to phenomena in the atmosphere and biosphere. The basic difference between human consciousness and natural phenomena has been taken into account, and we are dealing only with that aspect of the ethnic [sic] way of life which correlates with landscape.

On the basis of the preceding conclusions, Gumilev asks a crucial epistemological question about where in the field of knowledge to situate this "proposed explanation of the mechanics of the process of influence of landscape
on ethnos. Asserting that it "has nothing to do with [either] environmental determinism [or] with an interpretation of the historical process," Gumilev (1966c: 35) argues that this science of landscape and ethnos, or ethnology, (cf. definition p. 73) is fully within "the area of historical geography," and hence "is not a social, but a natural science." This epistemological proposition and its supporting argument creates an entirely new approach to the discipline of historical geography, one fully consistent with both current developments and traditions within the field at large, irrespective of the ideological or intellectual boundaries of nationality. In fact, Gumilev's contribution within the Soviet discourse has been to construct a methodology analogous to systems of cultural geography or human ecology developed in the non-Marxist academic world. In particular, this methodology parallels the Annales and Berkeley schools, and comes close to complementing Karl Butzer's (1982) contextual approach to a theory and method of archaeology as human ecology.

In analysing these important initial propositions which provide a foundation for Gumilev's theoretical construct, it is necessary to compare his sources with some other standard data base, particularly in regard to the environmental data used to argue the east-west differences. First, regarding climate and the cyclonic belt, this is confirmed in a number of reference works, (Gregory, 1968; Berg, 1950; Borisov, 1965; Suslov, 1961), all of whom refer to Gumilev's main source Alisov (1950, 1956) as the principal authority on climatic regions of the USSR. In fact, Gregory (1968) discusses the USSR climate as "moist in the west, drought in the east," stating that from prehistoric times the people of the more arid fringe of the southern steppe seem to have been attracted to the narrow zone of greater precipitation that stretches across the south of Central and Western Siberia and leads the way to the broader zone of more adequate moisture west of the Ural's... drought has always been the greatest enemy... for moisture, abundant snow, and rain [we] must look to the west, where cyclonic activity and precipitation accompany
the advance of maritime air streams. Precipitation alone, however, is not the major factor affecting growth of vegetation... humidity, temperature, and evaporation are equally important... all this is expressed to a large extent in terms of the balance between heat gained by insolation and lost by radiation... this in turn depends on the weakening of the cyclonic activity towards the south... and is reflected in natural vegetation... the Tien Shan offer no protection to the lowlands of... Central Asia because they lie to the east of the cold air that flows in from the north... In other highland areas, on account of the prevalent direction of the cyclones, the western slopes receive most rain or snow... [thus] an important economic factor of mountain climates is the growth of cloud and humidity which helps to keep the pastures green and fresh and provide good fodder for sheep and cattle (1968:212-218).

From the preceding abbreviated description of the climatic regime and interaction between cyclonic paths and mountain belts, we can better understand the substantive basis of Gumilev's argument on the tendency for a major economic, cultural and ethnic divergence to develop between east and west. The particular distinction Gumilev makes between the "geobotanical boundaries, Mongolian and Dzungarian-Turanian," based on precipitation is likewise confirmed by Gregory, (1968:226-231, 267-279), who describes current livestock economics in similar terms of extensive-intensive differences. Corroborating Gumilev's thesis, Gregory (1968), describes the extensive model, based on more arid rangeland in Mongolia, the Alashan steppe and Tarim basin, as follows:

In the south of this semi-desert, the short duration of the winter and light snowfall make it possible for cattle to graze nearly all the year round; but in the north where there is more snow, winter feeding is a problem that has been solved traditionally by nomadic migration. The clayey soils of the north are moist in spring, but quickly dry out later. The sandy soils of the desert zone provide more fodder in summer, because of the moisture stored in the subsoil. Hence migration takes place between north and south. There are areas, too, where the spring moisture remains during summer in lakes, streams or in substrata near the surface of the soil. Migration takes place to these areas or river valleys and to the uplands around the border of this region -- to the high mountain meadows and steppe. The herds return to the plains in the autumn before the onset of the cold winters and heavy falls of snow that are characteristic of the highlands. These herds may spend the winter in the river valleys or any place where it is possible to gather and store fodder during summer to be used by the animals in the winter. In the past these annual migrations have produced an entirely nomadic type of herding,
This excellent descriptive passage which conveys the sense of an extensive way of life "which makes possible active social intercourse among herders," and hence, a broader communications field, will help create a context for Gumilev's increasing references to historical conditions in relation to the effects of climate and environment on the Eurasian steppe ethnoses. Though Gregory writes within the Mackinder geopolitical tradition of "heartland and rimland," this environmental orientation also presents continental points of view, such as L. Febvre's question: "are human character and the evolution of human societies due to physiology or climate?" (1968:230). Nevertheless, Gregory's concerns for the interaction of man and environment should be seen within an extended field of discourse that would include Gumilev and others seeking a balance between social and environmental determinism. Such efforts are, after all, in the long-term interests of Geography as a valid and active discipline.

In describing the second landscape type, Gregory again confirms the type of encampments proposed by Gumilev as integral with an intensive system of stockrearing and lifestyle in the south-eastern sector of this Turko-Mongol nomadic hearth. Relying on an analogy more than on direct description, Gregory writes of these alpine meadows and steppe in livestock rearing region in the Tien Shan, Pamiro-Alai mountains;

the greater part of the highlands is covered with steppe, with thickets of junipers in many areas . . . [and] forests . . . [that] give way to alpine pastures at higher altitudes . . . steppe vegetation with sedge or sagebrush . . . [has] a colourful flowering spring vegetation of bulb plants, followed by wheatgrass . . . but even this dies off by the end of July . . . some areas are practically desert . . . the prevailing aridity of the mountains as compared with the fertility of the well-watered valleys is emphasized frequently by descriptive writing (1968:272).

In giving an example of the peculiarities of the landscape and its effect its
the valley itself is a stretch of flowery alpine meadow of inconceivable beauty. Though the steep rock faces... were covered deep in snow, rare flowere of every brilliant colour bloomed in profusion amidst the grass at their base... a fairly good caravan road leads upward along the Kyzul Su between the Alay and Trans-Alay ranges... through the loveliest valleys in Asia... high rock cliffs plunge steeply down into the valley... wooded mountain sides... change presently into the ice-fields. Hundreds and hundreds of black Kirgiz yurts dotted the pastures, camels and yaks grazed peacefully side by side, flocks of innumerable sheep scrambled like chamois amongst the cliffs and rocks while troops of tiny horse-herds drove their charges to the river to water them (1968:273).

Continuing southeast, Krist describes the landscape as barren rocky heights mixed with alpine valleys of the Trans-Alta range inhabited by the Kirgiz:

these mountainous lands yield much less milk and dairy products... but more meat and wool. Sheep-rearing is the main occupation, although there are considerable herds of cattle. There are large tracts of rough mountain pasture with steppe-like vegetation rather than mountain meadows land and grazing is possible even in winter, when there is almost no precipitation (1968:275).

Continuing his description, Krist shifts to the Tien Shan ranges, where, the Kirgiz people have for long been noted for horse-breeding... their large herds need immense spaces for grazing. Climatic conditions and the nature of the Turkistan terrain compel them to shift their camps. In the autumn they move down to the warmest and most southerly parts of their territory, while in spring as the snows retreat they gradually return to their high-lying plateaux. Each Kirghiz family has its on definite section of pasture, and its rights therein are scrupulously respected by other families and tribes, so that quarrels about grazing rights are almost unheard of (1968:275).

As this passage well illustrates, the particular set of habits that affect "tribal organization and... social tendencies," proposed by Gumilev for the Tien Shan and Dzungarian landscape and ethnos, differs distinctly from the more extensive behavioral field to the north. Given that this divided ecological pattern was the same over the past two millenia, a fact supported by other authorities, (Saunders, 1971, Krader, 1963; Lattimore, 1951; Simor, 1963; Barthold, 1968; Eberhard, 1965), does Gumilev's interpretation of "ethno-psychological syndromes" stand up as the basis for two different paths of
development? The answer would seem to lie in following Gumilev's (1966c:35) argument that this "regionalization of the ethnosphere," deals "only with that aspect of the ethnic way of life which correlates with landscape." For the present, then, an investigation of the interaction of natural conditions in creating the post-glacial, historical geography of Eurasia includes climate, landscape and ethnos. But before delving more deeply into Gumilev's theoretical arguments and the implications of this and succeeding methodological propositions, we now turn to his initial classification system, "The chronological table of moisture changes in the Eurasian Continent, based on the data of paleoethnography," and exposition of its data and supporting evidence.

Following this chronology of climatic impacts on Eurasian historical geography, and before further discussion of method, a brief exposition of an article co-authored by S. I. Rudenko and Gumilev will help to make the transition as it pertains to the issue of climate and historical geography of the Eurasian steppe but treats archeological evidence more extensively. It also provides another reference point to help situate Gumilev's synthetic method.
CHAPTER V:

ON HETEROCHRONISM IN THE MOISTURE SUPPLY OF EURASIA IN ANTIQUITY

In developing his synthetic method of Central Asian historical geography, Gumilev addresses the problem of more precisely situating the rise of nomadism in the 1st millennium B.C. in relation to climatic fluctuation. Beginning with the support of an academic consensus, Gumilev (1966d: 34) builds on the fact that research on the character of climatic fluctuation in the arid and semi-arid zones of Eurasia in historical times, [from the 1st century B.C. to the 18th cent. A.D.], has yielded agreement with the concept of alternating humid and dry periods formulated by A. V. Shnitnikov subject to the correction of V. N. Abrosov for hetero-chronism in the increased moisture supply of the arid, humid, and polar zones. His theory is supported by reference to Shnitnikov (1957), Abrasov (1962) and Alisov (1956), who are the generally recognized authorities on the subject. But Gumilev (1966d: 34) qualifies the time period for which this proposed method to analyse the migrations of nomadic peoples can be useful, finding it inapplicable "to earlier eras, for which we lack sufficiently detailed data." Yet he claims that Shnitnikov (1957) demonstrated how to overcome this obstacle to applying the concept of heterochronism to an earlier period (the epoch of pastoral nomadic evolution), though admittedly with a greater margin of error, . . . [by] an expanded range of observed phenomena, including natural phenomena in addition to archaeological findings . . . with interpolations where-
ver possible; and finally, use should be made of the paleoethnography of the arid zone worked out by Rudenko (1956), and all these observations should be compared chronologically. The margin of error will exceed a century and small fluctuations within periods will have to be ignored, but a general pattern can be traced and that is the purpose of the project (1966d:34).

Admittedly, to interpret and reconstruct prehistoric human ecologies represents a major problem; in absorbing such a vast expanse of literature -- from the great amount of terrain covered, over a correspondingly long stretch of history; to specific studies of material culture integral with paleogeography and technical concerns. Gumilev addresses this problem by calling for a synthetic research method of generalization and reference to secondary and tertiary sources. To use this method the researcher must therefore base himself on the aggregate of previous research that has already been generalized in a few fundamental studies. Otherwise a history of the research will take the place of a solution to the problem. The chronological framework will also have to be restricted [as] the dates of Paleolithic sites ... are at best, unreliable, and approximate. We have therefore concentrated on the Bronze and Early Iron ages, i.e., the last three millennia B.C., ... [giving] only summary characterizations ... [although] sufficient for our purpose (1966d:35).

Likewise, in this assessment of Gumilev, the important elements must be selectively drawn from his vast empirical generalizations. My criterion for selection has been one of relevance, either to a concrete example of theory or empirical data, or to a particular point in the argument needing discussion. My selection, however, tends to favor those intersections of history and geography with which I am most familiar and thus better able to comment upon.

Gumilev begins his examination of "the succession of climatic periods from the point of view of zonality, and the heterochronism of increased moisture supply" with an example from post-glacial western Europe (see the first chronological table, Figure. 3). He found that an increasing warming trend developed towards "the end of the Atlantic period [c. 2300 B.C.] ... marked
by a northward shift of cyclones," and involving a rise in water levels and temperature in Scandinavia. This trend corresponded to an increase in aridity across the more southerly latitudes, where, Gumilev (1966d:35) states,

peat bogs of Western Siberia and even Britain dried up; in the Alps, glaciers retreated, [opening up the way for] settlements . . . and communication across mountain passes . . . the Tripol'ye culture moved from southeastern Europe [northwest] to the more humid parts . . . in connection with . . . the northward advance of the steppe.

This period climaxed with a "great flooding of Mesopotamia and eastern China," the so-called "deluge" referred to in the ancient records. By correlating Hebrew, Babylonian and Chinese sources, these floods can be dated as occurring between 2297 B.C. and 2379 B.C., and during which "the waters of the Yellow River and the Yangtze merged." Gumilev therefore concludes that

the coincidence of the great floods on the western and eastern margins of the Asian continent can be compared with an intensification of the North Iranian branch of the cyclone tracks and of the southerly direction of the monsoon. It was an excess of moisture that they [sic, floods] carried to the mountains of Armenia and Tibet that caused the rivers to rise (1966b:35).

Gumilev proposes that the steppe zone also suffered a growing aridity, as it has well been established "that population of the arid zone was sparse in the third millennium B.C., and that there were no active links between West and East." The transition at the end of the third millennium was equally rapid, however, as an increase in moisture to the humid zone was marked by advances of Alpine glaciers and steppe forests, and an increasing growth of peat bogs, among other archaeological and paleogeographic data. Therefore, according to Gumilev's analysis of Shnitenkov's chronology, at the outset of the second millennium B.C., the climate again reversed and entered into

the xerothermic phase of the subboreal period . . . characterized by a desiccation of the humid zone . . . again the mountain passes opened in the Alps . . . settlements around lakes . . . descended to the floodplains of streams and lower places along lake shores . . . This process evidently extended to the Volga-OKa watershed . . . winters became dry and clear and summers hot. This region benefitted from
the gradual desiccation and attracted a wave of migration from the banks of the Vistula and the Dnepr... the ancestors of the Slavs and the Letto-Lithuanians, carriers of the... Fat'yanov culture... based on primitive hoe cultivation and settled stock raising... [as] burial sites dating from the bronze age contain bones of horses, an animal... associated with dry areas (1966d:27).

As "the cyclone tracks reverted to the humid zone," the Fat'yanov culture responded to again another climatic shift. They retreated from the Volga and Klyaz'ma around the beginning of the first millennium, when "natural conditions ceased to favor the newcomers, who by then had "settled permanently in the basins of the Dnepr and Desna."

Focusing on the importance of this unique "xerothermic period," Gumilev (1966d:37) cites Liberov's (1964) findings, in that, it was just as beneficial for man in the arid zone, which received an increased moisture supply. Tree groves appeared in the steppe, deserts became overgrown with grass, herds of ungulates multiplied and, from the banks of the Dnepr to the slopes of the Altay, hoe cultivation and stock herding flourished. The settled mode of life of the Bronze-Age steppe dwellers has been established from osteological analysis: cattle dominated within the herds, followed by sheep and horses.

This emerging Bronze-Age period marks the rise of steppe cultures, beginning with this "so-called catacomb culture, named for its type of burial sites," and which was the first culture to flourish in the South Russian steppe, continuing through the first half of the second millennium, only to be replaced by the "wood frame" culture, so-called because of its use of carpentry in its burial tombs. On its eastern borders, the Andronovo culture has been dated from the 17th-12th centuries B.C. and extended all the way to the Tarbagatay and Minusinsk basin. Although Gumilev points out that exact archaeological dating for these Bronze-Age cultures is still rather arbitrary, what counts is the total interrelationship between environment and culture. He thus stresses, the important point... is that the steppe zone was suitable for a settled mode of life and for primitive agriculture in the second millennium B.C., suggesting a greater moisture supply in that territory. ... Quite properly regarded as the peak of the Bronze-Age...
tools enabled the steppe dwellers to work fertile land... on river terraces and near bodies of water... Soils, well supplied with water... rewarded the primitive tillers generously for a relatively small amount of work... Surplus grain stimulated animal husbandry by providing grain and straw in winter... When a particular tract of land became exhausted, the steppe dwellers found it easy to move to new tracts in the wide open spaces... [Moreover] ethnographic parallels suggest that the primitive cultivators were a highly mobile people, [for example] the squatters [who rapidly] moved across the North American prairie or the Boers from the Cape to the Transvaal. In their attitude towards natural resources, both closely resembled the steppe dwellers of the Bronze Age, who also travelled on ox-drawn carts (1966d:38).

Gumilev has now presented a strongly supported generalization that Bronze Age culture spread rapidly in both easterly and westerly directions during the relatively moist and clement 2nd millennium; a period corresponding to desiccation of the Humid zone. And yet he cites this very mobility as a factor that inhibits accurate estimates of the population and its diversity because archaeological sites have tended to represent only fertile river valley settlements. As such, the data present an incomplete picture of the full cultural scope of Bronze-Age steppe peoples. To fill this gap, Gumilev suggests a "recourse to certain relicts of historical terminology," or linguistic data which would connect eastern and western cultures through homology. While suggesting some similarities in sounds and meanings, he provides no references or supporting theories from linguistics. One could be sceptical of this argument. And yet, an eminent Berkeley philologist, the late Peter Boodberg, proposed a link between Latin and Chinese through the Indo-Aryan steppe cultures. Boodberg never published this work because he refused to acknowledge copyright law, and my lecture notes are insufficient to substantiate Gumilev's (1966b:38-39) following examples:

the Turkish epithet yshbara goes back to the Aryan asparak, or horseman, and the title khan used to mean high priest, thus coinciding with the meaning of the same phoneme cohen among the ancient Semites.

Nevertheless, Gumilev's main point in raising the philological issue is to
contend that the Bronze-Age steppe represented a communications field. Despite diffusion barriers such as deserts which could not be "traversed without horses or camels," the steppe provided the first link between eastern and western Eurasia. Whether there were borrowings, or independent development of cultural artifacts, such as homologous terms, (an argument he avoids), Gumilev (1966d:39) stresses that he is trying to establish that the conditions for cultural exchange [existed] between the western and eastern margins of the ecumene, and that it must have dated from remote antiquity because in the last few centuries B.C. Rome and China heard about each other for the first time, and their cultural exchange was quite different in character.

This point of communications rupture should be understood in the context of a long debate over which aspects of cultural life were developed in the western or eastern zones of Eurasia and consequently spread in the opposite direction. For example, in maintaining that "the whole military life of China was reorganized by the kings of the Han dynasty on Iranian lines," Rostovtzeff (1922:203) has been criticized as "eurocentric" by Sinologists.

The reason for resorting to an extensive chronology, Gumilev emphasizes, lies in the need to rewrite the history of "the conditions under which the nomadic economy arose in the Eurasian steppe." The intricate web of climate, ecology and culture must now be woven within a loom of ethnos to accomplish the historical geography intended by Gumilev's project. This task is accomplished by references interwoven with interpretations, in an argument for what Berg and Dasman (1981) have termed a "bioregional culture."

In applying his method to a primary period of steppe human ecology, Gumilev cites Kislev's (1951) mapping of sites where Andronovo type pottery has been found. Extending from southern Turkmenistan to Semirech'ye, this pottery suggests a wide dissemination of that form of life... [as] the eastern boundary of the Andronovo culture has been traced from the Tarbagatay to the Sayan Range, but we can only surmise what was
happening at that time in Dzungaria, Mongolia and the Pei Shan. Most probably if the culture of that area was, if not identical with the Andronovo culture, at least similar to it (1966d:39).

Agreeing with Gumilev that a strong similarity exists between certain widely separated cultural sites throughout the Bronze Age Eurasian steppe, some caution must be taken in identifying a great number of these sites with the Andronovo culture. Most authorities have divided the Andronovo-like sites into a far greater subdivision of cultural categories, but, in an extensive survey, Trumkin (1970) suggests that current evidence supports a wider range for

The Andronovo culture -- a collective name which may, in spite of some differences of opinion among archaeologists, be taken as covering various regional cultures of the Bronze Age over a long period -- [and which] was originally thought to have been confined to the Siberian Minussinsk region ... It thus extended from the Ural river in the west to the Yenissey in the east, and from Omsk ... to the Aral Sea ... (1970:14).

Discussing cultural similarities in contemporary pottery types from other sources, recent Chinese archaeological expeditions have unearthed numerous sites in the areas of Dzungaria, Inner Mongolia and the Kansu-Ordos region. These sites produced an immense amount of artifacts of great similarity to and contemporary with the Andronovo materials. In a survey of recent Chinese archaeological discoveries, Zhongmin and Delahaye (1985) discuss the finds in Gansu which were announced as a northwestward diffusion of proto-Chinese cultures labeled "Yangshao and Longshan." The authors state that

[as] contacts with western Asia certainly pre-date the opening of this [the Silk] route. Chinese scholars, to whom a sinocentric outlook is often second nature, very rarely mention the striking similarities between the decorative motifs of pottern found in Lanzhou, Jiuquan and in other sites in Gansu and those of the pottery traditionally made in sites near the Caspian Sea. Likewise one cannot but note similarities between the motifs and forms of the Neolithic pottery unearthed in the northern zones of Inner Mongolia and Manchuria and those of Siberian cultures (1985:32).

Not only are comparable pottery remains found in the eastern steppe margins, but the authors also (1985:32) present a further example that points strongly
to a trans-steppe culture -- the discovery of metal objects.

bears directly on the Bronze Age, [and] somewhat moderates the theo-
ries fondly advanced by Chinese scholars, according to which the
closed cultures of the central plain alone gave rise to Chinese
civilization. This example is a granary at Wuwei in Gansu, in which,
a dozen or so years ago, some knives, chisels and awls were disco-
vered made of an almost pure copper, and dated at around 2000 BC.
These were amongst the earliest metal objects discovered in China.

While one more recent discovery does not prove all of Gumilev's
earlier speculation, he may, like others who paint in broad sweeping-strokes,
have sensed the underlying composition intuitively before it appeared complete
on the canvas. The diffusion of culture from west to east was long a cherished
Eurocentric view in contrast to Sinocentric counter claims. The middle path
has been well trod, both literally and figuratively, by Owen Lattimore, whose
Inner Asian Frontiers of China (1951) sums up his thesis that many of the
cultural artifacts discovered on the margins, were, so to speak, washed up on
the shore of a vast inner Asian sea within which creative hearths produced some
of what the civilized littoral states claimed. Gumilev suggests a balance
between a Slavocentric and "steppeocentric" view. A desire to prove that the
Bronze-Age was a time of cultural unfolding across the steppe is further sup-
ported by evidence drawn from Debets (1948) in Gumilev's argument that

the landscape and geobotanical composition of the western and eastern
slopes of the Altay are of the same type, and the monsoons that water
eastern Mongolia are subject to the same heterochronous patterns as
the Atlantic cyclones. Consequently, conditions can be considered to
have been suitable for hoe cultivation and settled animal husbandry
throughout the entire steppe belt to the Khingan [Range]. This does
not mean that the population of the entire area was monolithic, but
in view of the great mobility of people engaged in hoe cultivation it
can be assumed that intercourse among the steppe dwellers of the sec-
ond millenium B.C. was quite extensive. Climatic conditions at that
time had, after all, eliminated the principal obstacle, the trackless
deserts, which during this period of greater moisture must have been
greatly constricted and could not present a barrier to tribal inter-
course similar to the forests of the humid landscape, which was
undergoing a period of dessication (1966d:39).
Speculating on the possibility that "the second millennium was marked by climatic fluctuations related to a shift of the cyclonic tracks from the arid zone towards the north," Gumilev finds insufficient evidence of that early climatic history to make such a proposition. Nevertheless, given the known climatic conditions, Gumilev (1966d:39) conjectures that since Mesopotamia did not suffer any flooding, the North Iranian branch of the cyclonic tracks was weak and, consequently, frosts reigned in the Arctic. And, if this is the case, the range of fluctuations in the moisture supply must have been relatively small, and the second millennium may be regarded as a climatic optimum.

He suggests that this period (1) provided ideal environmental conditions for human development, (2) coincided with a rapid and extensive movement across the entire Eurasian landmass, and (3) possibly connected many previously isolated cultures and settlements into a potential communications field. But the weather as it is apt to do, underwent another change, and thus environmental impacts had momentous consequences for this Bronze-Age steppe culture of settled hoe agriculture and stock raising.

Following the environmental optimum of the second millennium Bronze-Age, the next climatic period is one of increasing moisture in the humid zone. Shnìtnikov (1957:263) defines this period as "transitional between the sub-boreal and the sub-Atlantic periods and dates from about the middle of the first millennium B.C." But, on the basis of more recent data from research on the Caspian, Gumilev (1966d:39-40) has corrected Shnìtnikov, as the data indicate a reversal to a more arid period in the humid zone, as follows: the increase in moisture noted by Shnìtnikov for the humid zone began about the nineteenth century B.C. and ended by the fifth century B.C., corresponding to a sharp dessication of the arid zone; [and] a moisture increase in the arid zone. From the fourth century B.C. till about the first century B.C. would, according to our thesis, coincide with a dessication of the humid zone . . . [and] if we make a zonal breakdown of the historical evidence cited by Shnìtnikov to prove an increase in the moisture supply, our concept is confirmed.
Having identified the period of climate crucial for life on the steppe, Gumilev now sets out the ecological basis for his theory of the rise of nomadism, based on a necessary response to environmental conditions that called for either abandoning the dessicating steppe, or changing the way of life.

On Landscape, Ethnogeny and the Rise of Pastoral Nomadism

Beginning in the tenth century B.C., Europe passed through a cold, wet cycle lasting until well into the seventh century, a period of nearly 300 years. Shnitenkiv's (1959:263-64) evidence shows that peat bogs flooded, broadleaf forests perished. Rhine River floods changed the North Sea coast, forests returned to the Ukraine, etc. Correspondingly, drought struck the arid zone, a view confirmed, according to Gumilev, by A. G. Gayel's (1959) unpublished field report which produced archaeological evidence of giant dust storms. Fieldwork on Don River terrace soils (Gayel' and Gumilev, 1966) also supports the alternating (heterochronic) model of climate and ethnic history. Based on the present accumulation of evidence, two aspects of Gumilev's heterochronic ethno-climatic theory emerge. First, there appears sufficient evidence to confirm the pattern as irregular, but cyclical. Second, it defines a simultaneous ecological and behavioral response to climatic change. As confirmed by the evidence, north-south shifts in the cyclonic belt engender these climatic changes, simultaneously increasing moisture in the humid zone and aridity in the arid zone and, and vice versa. As Gumilev states,

once we have established an intensive increase in moisture supply for the humid zone, we can assume a corresponding desiccation of the arid zone, aggravated by the anthropogenic factor. The primitive tillers disturbed the soil layer in their fields, and their herds trampled the sands around watering places. As long as the climate was humid, rapid plant growth prevented the deflation of sands, but when the drought began, the wind whipped up clouds of dust and transformed the fields into deserts (1966d:40).

The onset of this period of increasing environmental hazard for the steppe
dwellers produces a new era, which Gumilev identifies as the point that the period of nomadic life really began . . . [as] the amount of food that nature provided for man was reduced, settlements decayed, and many were abandoned. The population either retreated into mountain valleys, the Altay and the Tien Shan, or adopted a new mode of life suited to the new conditions. That is how the nomadic system arose (1966d:40).

Challenging previous explanations of the origins of pastoral nomadism, Gumilev has reached the conclusion that increasing desiccation of the Eurasian arid zone led to the rise of this way of life on the steppe. This process occurred during a time span of roughly 1500 B.C. to 500 B.C., peaking around 1000 - 700 B.C. in a rapid desertification that triggered the pastoral ethnogenesis. And yet introducing the previously disregarded concept of "the periodic and heterochronous character of the moisture supply" does not change the "established facts and dates." It is, as Gumilev (1966d:40) states, "only the interpretation of the events [that] differs radically on the basis of new data contributed by physical geography." But can we accept his contention that this "new interpretation automatically eliminates the previous points of view so that they do not require criticism"? Can we really dismiss such a wide range of theory simply on the basis of this new interpretation and the statement that Rudenko's "argument is so convincing that other concepts do not even deserve attention"? Given the strength of Gumilev's new data, his conclusions from them, and considering the significant support receives from S. I. Rudenko's well respected theory, the answer may, in the first instance, be yes. That is, yes, if the theory to which Gumilev primarily refers, and the only one cited at this point in his argument, was one advanced by M. P. Gryaznov (1950), especially as Gumilev does not more fully discuss the work by that scholar. But if Gumilev's presumes to dismiss all other theories, then in this instance, my agreement would be more equivocal.
Before turning to Rudenko's (1961) theory of how and when steppe nomadism evolved, there remains the problem of situating it within a range of possible theories. From the geographer's standpoint, there exists quite a wide range of theories based on historical and paleo-geography, and which, like Gumilev's and Rudenko's, are inclusive of landscape, climate and other ecological as well as social data. For example, one may begin with the article in Man's Role in Changing the Face of the Earth (Thomas, 1956), by von Wissmann, a noted expert on the historical geography of the steppe. Articles by Sauer, Bobek and, although not a geographer, Beardsley, treat this subject and appear in both Thomas (1956) and Wagner and Mikesell (1962). In fact quite a few eminent historical geographers deal with the origins and dispersals of pastoral nomadism in full consideration of ecological conditions. Owen Lattimore (1940, 1962) has put forth some very plausible ideas for the origins of nomadism, as have both Wolfram Eberhard (1965) and Lawrence Krader (1963).

Before considering these other approaches to the origins of nomadism, the question must be raised of whether or not there are really any serious contradictions among geographers regarding the issue, especially in light of Gumilev's interpretation. From a general overview, the facts are commonly accepted, supporting a general consensus among many theories of this steppe ethnogenesis, varying in degree more than in substance. One can infer, however, subtle shades of interpretative differences. This may not be the case within Soviet academic circles, where Gumilev has to face a barrage of social determinists who rigidly interpret human social evolution, constrained within an over simplified and outmoded model. The functional limits to a historical materialist model of cultural-technical development progressing through fixed stages, affect the range of possible interpretation. If Gumilev's argument is with his social determinist colleagues, rather than with a consensus held
within the general field of cultural and historical geography, then this comparison of theories serves only to present the reader with a broader perspective on the corpus of that discourse. But as this question cannot be satisfactorily answered, a brief overview of the generally held views of nomadic origins cannot be avoided.

In beginning a discussion of theories of pastoral nomadic origins, an excellent condensation of the historical point of view is found in Saunders' (1971) work on the Mongols. Saunders' interpretation agrees with Gumilev's proposition that two differing cultural-environmental ensembles gave rise to corresponding differences in historical social organization. In fact, Saunders rejects historicist claims on the nature of nomadism, e.g., stating that

Pastoral nomadism is not an intermediate stage on the evolutionary path from hunting to farming. It is a highly specialized way of life, involving the domestication and control of a variety of animals and the utilization of vast tracts of land with sparse rainfall in such a way as to provide support for men and beasts. The nomad [his Greek name means 'cattle-driver'] enjoys the freedom of the open country, of wide spaces, and changing scenes . . . the flesh of his flocks and herds provides him with food, their skins with clothing and covering for his tent; yet he is the prisoner and at times victim of the seasons, and a severe winter may prove fatal (1971:11).

Referring to the importance of the horse in the development of nomadism, Saunders find the two intimately linked, as

in this long struggle, the nomad derived an inestimable advantage from the taming of the horse, a revolutionary innovation possibly achieved by the Sythians of the Russian steppes in the first millennium before Christ. The operation was conducted in two stages, doubtless separated by a long interval of time: the wild horse was first domesticated, so that it could draw a light car or war-chariot; and later a new species [sic] was bred with a backbone strong enough [sic] to carry the weight of a rider in battle (1971:12).

Suprisingly, in his model for the origin of nomadic peoples (Huns, Sythians and Turks), Gumilev neglects the fact of the horse's importance. In the evolution of a true nomadism, capable, as Gumilev proposes, of creating and maintaining a broad communications field, the distinction between ox-carts or
chariots and the freely mounted rider remains tremendously significant. In fact, when discussing origins, Gumilev and Rudenko generally refer to the earlier, less mobile and more spatially segregated form of nomadism. Nevertheless, this seeming contradiction actually finds resolution in Gumilev's attempt to build a general, structural type of socio-ecological model. He places an emphasis on communications and organization, rather than on the specific genesis of the fully mobile horse nomad.

Addressing the origins of the horse-nomad symbiosis from a zoogeographical perspective, H. Epstein (1962, 1969) and Zeuner (1963), are the major researchers into the horse's transition to domestication. Considering the capability of man to mount astride and maintain control of an animal strong enough to bear his weight over distances, some research has suggested that the reindeer, appropriated by Tungusic reindeer herders, may have preceded the horse as a nomad steed. As argued by Nikolas Marr (1923), this theory, would support a case for the origins of mounted nomadism on the northern fringe of the steppe, at the taiga line. This theory contradicts the generally accepted source for the prototype in the southern steppe borders where contact would have been made with other draft animals domesticated by agriculturalists. While arguments can be made for a number of different possible origins, Gumilev has not committed himself to any specific theory of how the nomads domesticated the horse, or even for that matter, the ox. Presumably that is a secondary concern for his project, and one which he would leave to specialists. My own interpretation favors heterogenic influences on these widely ranging peoples.

At this point in his argument, Gumilev attempts no answers as to the constitution of the nomadic way of life, but he has made some conclusions about the more general process of evolution of the nomadic way of life, based on the work of S. I. Rudenko (1960). Gumilev states that
Rudenko (1960:195) has established the date for the appearance of the nomadic way of life in the Eurasian steppe and the characteristics of its stages of development. . . . [He] distinguishes three variants in the steppe-dwellers' stock raising: (1) the tribe is settled, but some members of the families move around with their stock in search of fodder; (2) The entire tribe roams about with the herds from spring to autumn; (3) The tribe migrates all year around (1966d:40).

On the basis of these three variants, however, how did the symbiosis between man and herds emerge, and how do cattle, sheep, horse and camel nomads differ with each variant? Answers to these questions are not forthcoming from Gumilev, except for references to Rudenko's theory, which finds that in the first two variants, stock raising is combined with some tilling of the land, if only to grow fodder for the herds; and the third variant is relatively rare, found only in the semi-deserts around the Aral Sea and eastern Mongolia (1966d:41).

How does Rudenko's notion of pastoral nomadic origins compare with other theories? Edgar Kant (1962) finds that typologies to classify such theories are underdeveloped, stating that, in categorizing existing theories, the only authors at this early stage who have a comprehensive overview of the various types of nomadism are A. Bernard and N. Lacroix (1906:65). . . . [who] first set up five types . . . later reduced to three: half nomads, steppe nomads, and desert nomads (1962:345).

This tripartate classification both complements Rudenko's theory, and predates it by a full half-century. Another scholar who addresses this problem, Hans Bobek (1962), is of the opinion that recent research is more inclined to the view that nomadic animal husbandry should be conceived of not as an independent cultural stage but as an ecologically conditioned off-shoot of farming culture, and specifically of small-grain farming. Not only the lack of autonomy of this way of life, which always and everywhere is bound to acquire supplementary food materials from farmers, but also the numerous transitional forms that occur between the small-grain farming and the nomadic groups, the high degree of coincidence of their respective areas of distribution, and finally the identity of their animals are indications that can hardly be refuted. Pastoral nomadism has reached beyond the small-grain area in only two places: in North Asia, through the adoption of migratory reindeer herding in taiga and tundra, and in Africa (1962:228).

Here Bobek relates the rise of nomadism to an offshoot of settled, mixed
agricultural stock rearing associated with the Bronze-Age, and even some Neolithic cultures, supporting in part Gumilev's thesis on a necessary adaptation to climatic change. Bobek also supports the notion of several varieties in the types of nomadic adaptation, wherein he does not in general conflict with Rudenko's scheme, as the following passage illustrates:

The transitional forms can be grouped around the two basic types of "partial nomadism," i.e., involving a part of the population only, as shows up for example in the so-called "transhumance" and the half or "seasonal nomadism" of the mountains and steppe borderlands, in which the great majority of the population takes part, to be sure, but moves about with the herds for only one part of the year, summer or winter ... the seasonal shift between several fixed settlements is another widespread feature somehow related to nomadism (1962:28).

Bobek's conclusions about the process by which nomadism arose in relation to a settled, mixed-farming economy, are similar to Gumilev's and Rudenko's. Nevertheless, he points to the western margins of steppe and fertile crescent as the source for this innovation, as opposed to a northern genesis, or to Gumilev's indeterminate situating of point of origin.

I doubt whether a single location for the origin and innovation of pastoral nomadism could ever be proven. Consequently, where comparable ecological conditions and evidence of human behavior can be found under similar climate patterns, the suggestion of multiple sources or locations seems to be supported. Both Gumilev and Rudenko stress the need to consider climatic changes in specifying the location where it would have had the greatest impact. Such changes would have created the strongest motivation for adaptation, either for ranging deeper into the steppe, or retreating to more humid areas where the mixed farming system could be continued. This choice, however, would have meant that migrations into the more agrarian hinterlands, e.g., China, Iran and Mesopotamia, would have added pressure on existing agrarian cultures and state systems. Such movements are, in fact, a matter of historical record.
Similarly, such conditions could also have caused possible northward migrations into forest and taiga creating new forest dwelling cultures, as well as the opportunities for transforming reindeer herding into a sled, and possibly mounted, nomadic adaptation on the northern margins. Nevertheless, Bobek's version tallies well with the model under consideration, aside from the problem of multiple versus single sources, and his suggestion of origins on the western steppe margins with little consideration of climate and ecological change. As he states:

The development of pastoral nomadism is explainable ... from the presence of widespread pasture areas usable only seasonally and not suitable for permanent occupation, and ... from the doubling of the economic interests of small-grain farmers who possess cattle ... If everything indicates that the elaboration of pastoral nomadism took place through a segregation out of the livestock-raising, small-grain farming cultures of the Near East, where the intimate neighborhood of ecologically very different areas must have been very inviting, then, this livelihood form, like grain-farming culture itself, spread into adjoining natural regions where it underwent characteristic transformations. It is probable that, originally, only small animals [goats, sheep and possibly the ass as a beast of burden], which still today play a large role in the Near East, were herded. Later on in the Eurasian steppe it was the horse, in the Asiatic North the reindeer, and in the hot deserts the camel (1962:228-29).

Based on the preceding assumptions, Bobek makes the following conclusions about the social structure of an original nomadic way of life, conclusions which also coincide with both Gumilev's and Rudenko's views:

the slight bond with the soil obviously contributed to the fact that among pastoral societies the family, clan, and tribal organization became the predominant ones, and formed both the economic and political units. This, however, did not exclude the adoption of aliens on any level, so that the relatedness of many groups was more often fictitious than real. Furthermore, there were confederations of different tribes for political purposes (1962:229).

Another important point which Bobek brings to this discussion, regards the periodization of nomadic origins relative to their level of interaction with more agrarian societies. As Bobek (1962) puts it,
the relation with settled farmers derived from the fundamental need of the products of farming economy felt by the nomads, and from the mutual competition for the land, at least during specific seasons. In this regard, the two most important periods in the development of nomadism should be assessed rather differently.

This division into periods arises from the fact that about the end of the second millennium B.C. horse-riding first appeared in the Eurasian steppe, and spread with great rapidity. Very soon the camel was also used for riding in the desert. The revolutionary character of this process lies in the military superiority that thus for long fell to the mounted nomads . . . another and more positive consequence was the opening-up of the great deserts for commercial traffic.

Compared with the world-wide historical manifestation of nomadism in the second period, its role in the preceding period looks pale. It is hard today to get a clear idea of the meaning of pastoralism in its early days . . . The early pastoral groups were surely often economically dependent on the sedentary folk, to whom they were always reattracted. Full nomadism if developed at all must have been much more weakly evolved, because of the lack of efficient beasts of burden. These tough folk used to the hardships of a merciless nature, may well have developed early a subjective feeling of superiority. To this might have been added some objective advantages, like greater craft and organization skills in their leaders and a stronger internal cohesion in the group. It is certain that aggressions against and domination of settled folk by nomad tribes were occurring long before the development of riding, (1962:229).

From Bobek's comments on the evolution of pastoral nomadism, we can clearly identify a difference between the earlier periods of pre-mounted migration and the tremendous impacts which the saddle and stirrup had on solidly mounting a rider. This technological advance would have also had a dramatic impact on social organization and culture (cf. L. White, 1959). But it must also be kept in mind that whenever and wherever the steppe offered sufficient moisture for minimal (hoe) agriculture, various peoples took advantage of this situation. Not always semi-nomadic or agrarian immigrants, these partial agriculturalists were sometimes the poorer kin of a fully mounted nomadic pastoral group. This pattern continues; as Ekvall (1939) observed, Tibetan nomads settle only after becoming affluent or empaupered; conversely, if economically successful, agriculturalists will turn to nomadism.
Some Conclusions on The Development of Eurasian Pastoral Nomadism

What can we conclude from Bobek's analysis of nomadic development, particularly in relation to the thesis put forward by Gumilev based on Rudenko's model? First of all, they are comparable as well as compatible, up to the point at which Bobek leaves off, i.e., regarding the more particular and explicit mode by which this generally accepted, and reversible, innovation occurred. Secondly, Bobek's two-stage model of adaptation is not addressed by either Gumilev or Rudenko at this point, but may not be material to their argument; Bobek cites Franz Hancar's (1956) contention that "the domestication of the horse took place first for the purpose of using the meat, in the remote part of the steppes and broadleaf forests," indicating another possible trajectory, closer to Gumilev's than Bobek's locus for the innovation. This issue of stages also involves locations and diffusions as well as possible multiple innovations, all converging during the Bronze-Age, to be thrust into the crucible of drought which followed and forced adaptations. It is not a simple fact that anyone should be looking for, but rather an interwoven ensemble of piece-meal fragments flowing in a dynamic, mosaical system which was the ecological and cultural reality of the Eurasian steppe and its margins from the beginning of the second millenium down to the middle of the first. This too is only a continuation of Neolithic agricultural processes referred to by Sauer (1962), who asserts that

herd animals, meat cattle, sheep, goats, horses, asses, camels are either original or very early in this system. The keeping of grazing and browsing animals is basic. All of them are milked or have been so in the past. In my estimation milking is an original practice and quality of their domestication and continued to be so in many cases their first economic utility; meat and hides, the product of surplus animals only . . . the harvest season is crowded into the end of the annual growth period; thereafter stock is pastured on stubble and fallow; land unsuited or not needed for the plow is used as range on
which the stock grazes and browses under the watch of herd boys or herdsmen (1962:547-48).

Although the notion of a cultural hearth located in the Near East is supported by both Sauer and Bobek, the concentration of archaeologists on both Neolithic and Bronze-Age sites at more accessible locations may, as Gumilev pointed out, have influenced, and hence restricted our view of the total cultural picture across the entire Eurasian steppe. Identifying this single region as the Neolithic hearth and postulating a dispersal from there, Sauer (1962) views this complex [as spreading] from its near Eastern cradle mainly in three directions, changing its character under changed environments and by increase of population. Spreading into the steppes of Eurasia, the culture lost its tillage and became completely pastoral, with true nomadism. This is controversial, but the evidence seems to me to show that all domestication of the herd animals, except for reindeer, was effected by sedentary agriculturalists living between India and the Mediterranean and also that the great, single, continuous area in which milking was practised includes all the nomadic peoples, mainly as a fringe about the milking seed-farmers. It has also been pointed out that nomadic cultures depend on agricultural peoples for some of their needs and, thus lacking a self-contained economy, can have hardly originated independently (1962:548).

The preceding passage of Sauer's represents a last outside opinion on the issue of nomadic origins. What has it added to or subtracted from the Gumilev-Rudenko model? First of all, it would support the notion of an "Andronovo" related type of cultural system spread across Eurasia leading the way towards domestication and primary herding, prior to a full transition to steppe dwelling primarily dependent on stock-rearing nomadism during the period of extreme desiccation. Secondly, Sauer's contention that a domesticated ensemble of man-animal-technology-grains was transformed into a nomadic variant, minus tillage, would correspond to Gumilev's proposal that this occurred out of necessity due to climatic conditions. As Sauer specified no mechanism for this transition, merely asserting that its character would alter because of "changed environments and population increase," we can assume a tacit correspondence.
We may conclude, in regard to the comparative aspects of this facet of Gumilev's argument, that he has probably made a sufficient case for his adaptation of Rudenko's model that it could stand as theory.

The next facet of his theory of pastoral nomadic emergence on the Eurasian steppe in relation to climatic and ecological shifts turns to the social mechanism for the innovation, again as proposed by Rudenko. Gumilev (1966d), citing Rudenko (1960), states that the transition from a settled mode of life to the semi-nomadic could not have involved whole tribes. Families with relatively small stock holdings had to remain in winter camps and only rich families could adopt the nomadic way of life [although they may have become rich] precisely because they adopted the newer and more effective way of life making optimal use of the drought-ridden steppe (1966d:41).

Here, the most potent part of Gumilev's theoretical ensemble is the idea of innovation leading to the large scale nomadic transformation brought down to a more local or smaller scale social level. But, as Gumilev makes plain, this is not a socially determined class-structure model, nor a case of intra-tribal differentiation, starting with a division of labor and ending with the fact that, under conditions of increasing aridity, those who were able to adapt to the new conditions survived and multiplied while the more conservative part of [all] the tribes was condemned to poverty and extinction (1966d:41).

Rather than an occurrence within a particular tribe, or in all the tribes, this process of natural selection would not have been uniform, nor probably even have selected for the same traits in every group, as conditions and situations would have differed over such a great area and long time span. In order to explicate this hypothesis further, however, Gumilev calls for "a look at the ethnic and archaeological map of the Eurasian steppe in the middle of the first millenium B.C.".

At this juncture, Gumilev can draw from both archaeology and history as sources for the first millenium B.C., as bases for propounding a new facet,
the emergence of ethnic groups out of the rise of nomadism. As he develops this idea, we are asked to imagine this long, optimal climatic period and relatively "monolithic civilization" stretched across the steppe, becoming fragmented into a large number of tribes and peoples differentiated by language, customs, and internal structure. They are also varied in material culture. First, one may distinguish the eastern, Mongol, and western, Altaic, culture areas (1966d:41).

Assuming first that this relatively uniform culture now has fragmented into numerous, and increasingly divergent, smaller units, and second that there developed a primary division between two sets of types, eastern and western, the stage is set for an analysis of their different trajectories. Beginning with the eastern wing, and citing Kiselev (1951:146) and Debets (1948:121), Gumilev proposes that

In the east we find the remains of two cultures: the Karasuk in the Minusinsk basin and the stone-tomb culture on the banks of the Selengga, the Kerulen, and the Yin Shan. Both cultures were those of Mongoloid nomads, except that the Karasuk culture was absorbed by the Ting-ling culture, while the Mongolian steppes gave rise to a paleo-Siberian race of the second order, including the Huns (1966d:41).

Now, citing Rudenko (1960:173), Gumilev finds that

In the west, the nomads resemble mainly the North Iranian peoples: the Scythians, the Saka, and the Yueh-chin, as [well as] other, less well known, tribes whose origins are more difficult to determine. This was the period of extreme differentiation of the steppe tribes. Herodotus reported that for their commercial contact with the Argepaei, a Mongoloid people on the middle Irtysh [River], the Scythians had to use a family of interpreters and a family of languages. There has been no recurrence of such mutual isolation in the arid zone of Eurasia . . . [ruling it out as a] heritage of the preceding Andronovo period . . . [in which the entire steppe] was inhabited by a single anthropological type and a single culture (1966d:41).

It must be understood that such generalizations represent a large-scale picture for which there are always exceptions, as Gumilev has previously stated that selective archaeological evidence for the earlier period has necessarily missed the breadth of cultural diversity. Moreover, there always have been isolates.
throughout the steppe regions. But in a larger sense, Gumilev wants to demon-
strate an oscillation from relatively uniform cultural strata of one period, to
variety in another, with a maximum divergence at some point, which subsequently
undergoes a transformation and tends towards a new convergence of forms.

Based on his relatively well supported assumptions, Gumilev now draws
the significant conclusion that the diversification of the steppe peoples
evidently took place at the beginning of the first millennium B.C.,
during the introduction of the new mode of life as new peoples pene-
trated into the steppe and parts of the old steppe dwellers went over
to a nomadic economy (1966d:41).

While finding this to be generally consistent with the whole argument and
comparative evidence, one question might be raised as to who were the new
people migrating into the steppe during its increasing desiccation. Were these
also former mixed small-grain farmers and stock-herders who for some reason saw
an opportunity and moved? One might suppose, for example, that their marginal
lands were suffering from drought and consequently they could not survive
there, nor move further into the humid zone against more entrenched agrarian
cores, but as small groups they could accept nomadic innovations, or possibly
even be the innovators themselves of the necessary transformation of a way of
life to gain viability in the extensive but dangerous steppe lands.

The independence of pastoral nomads has been challenged earlier in
this discussion by Sauer, Biehler, and others, but under conditions where margi-
nal agriculture was not possible, could not those innovators, as Gumilev seems
to suggest, take a more independent role? Certainly, from the eastern boundary
between the steppe and the proto-Chinese agrarian culture of the river-valleys,
only a slim margin existed either way for survival. Drought would impact on
farmers and herders alike, and the question of which direction was favorable to
survival would depend on a group's success at making the correct decision with-
in the constraints applying. If the natural selection process was at work, and the more nomadic lifestyle tended to form more cohesive groups, could not those groups already possessing the tendencies towards cohesion and even boldness, be the ones who embraced the nomadic option, and also gained a greater chance of success. As to the direction of movement, von Wissmann (1956) in studying the Chinese situation during the period in question concluded that

In northern China, the growing of millets allowed the food producing economy to leave the forests and enter the wooded steppes. This must have made possible a comparatively dense population in the loess country. Otherwise, the invasions from the west, mainly by way of the narrow chain of oases which later became the silk road would have led to the formation of a prevalingly Inner Asian people, language and race in China, which of course did not happen (1956:290).

We can therefore conclude that the margins of the steppe were always transitional between full and partial nomadism as well as between dry land agrarian practices and none at all. Likewise small groups of people took their chances, heading towards either a more nomadic existence or a more agrarian one, whichever both suited their character in the environmental circumstances and seemed most likely to insure at least temporary survival. This would mean, however, that this marginal frontier area contained a reservoir of peoples with skills of both herding and agriculture, and particularly for the former option, sufficiently adaptable to face the challenge. As all sources cited here, including Gumilev and Rudenko, have confirmed this ambivalence as inherent in the structure of the preceding neolithic and Bronze Ages, I can only conclude that this is a correct evaluation of the evolutionary potential at the margins of the steppe.

With this new reality of landscape and culture responding to climatically driven environmental hazards, the extensive communication field seems to have shrunk. As Gumilev cautions,
it would be a mistake to think that the nomadic life that existed in the seventh century B.C., i.e., migration with the herds over a certain segment of territory in accordance with the seasons, tended to promote intercourse among tribes. On the contrary, although the grazing areas expanded, the nomads, being tied to their sheep, had no incentive to abandon their herds [sic, flocks] (1966d:41).

Therefore, without a common language, the divergence of groups associated with this original pattern of pastoral nomadism reduced the communications field. According to Gumilev, it could have not been otherwise, as elsewhere in the history of nomadic life

intercourse among peoples and the growth of geographic knowledge were achieved by settled peoples, not by nomads . . . The Phoenicians and the Greeks contributed more to knowledge of the world than the herders of the Arabian and Syrian deserts, and when the Arabs entered the world stage, the initiative in geographic discoveries stemmed from the settled oasis dwellers rather than from the Bedouins (1966d:42).

This may be a problematic point, as it involves a qualitative judgement on one hand, and a quantitative comparison on the other. The much larger population of settled peoples, despite their momentous history of great and small migrations, not only outnumbers nomads by at least a 1000:1 ratio, but also tends to leave fixed monuments of its cultures. Communication and interaction between Bedouins and settled peoples, however, have always been more complex in terms of cultural transmission than indicated here. Moreover, the complex knowledge of long-distance navigation is no small skill or contribution to human science, whether on land or sea, as Bobek points out:

a parallel to the significant role of the mounted nomads . . . is formed by the warlike and mobile sailor tribes -- also arisen from farmer elements -- of the ancient Mediterranean, North Europe, and Oceania, who likewise founded or destroyed kingdoms (1962:230).

To these maritime nomads might be added the complex web of navigation arising out of Arab culture which brought the camel, originally a shoreline animal (Bulliet, 1982), into contact with coastal seamanship to create pre-modern history's most adaptable and extensive system of communications and exchange.
The Arab coastal settlements acted as nuclei for a mobile way of life. No one segment of their culture remained independent from this complex, which included, along with bedouin stock raising, knowledge of the terrain, and in conjunction with their urban associates, of caravan organization, and likewise celestial navigation. At least for these nomads, in addition to their incomparable poetry and oral traditions, an astute empirical scientific inclination not only brought their sometime settled urban descendants into contact with the universal corpus of theoretical science in the classical period of Islam, but also their practical and theoretical knowledge could not have been either collected or transmitted without the appropriate communications and transport network integral of, and useless without, a bedouin component. As Max Sorre (1962) pointed out,

the efficiency of pastoral practices rests on knowledge acquired empirically of the properties of environments and the requirements of livestock. The ability to make a distinction...between the natural and supernatural is not a very old accomplishment [possibly more attributable to nomads that settled], as each material technique has a counterpart in religious or magical practices, and no great importance needs to be attached to the choice between these two worlds (1962:400).

In reality, the deep interconnection between "steppe and sown" has existed from the time of the more or less "monolithic" Eurasian steppe culture developed most fully during that great period of climatic optimum in the second millennium B.C. as stated in Gumilev's historical geography. But this Völkerwanderung of the Bronze-Age, and some of its subsequent nomadic and other migrations, must certainly have had a climatic basis, as Edgar Kant, (1962:345) states, citing the possibility that "the Viking trips" were connected "with the warm dry period of A.D. 800-1200...certain [ones being] linked to monsoon changes in northwest Europe." As Gumilev had compared them with Bronze-Age ox-cart migrants, so Bobek (1962:345) also reminds us that the Boer trekkers
had been for the most part Dutch farmers and sailors . . . [whose] transformation into a pastoral people, who in almost all respects adapted themselves to the dry conditions of the South African veld, was simultaneously a transformation of the life-form; which the late Leo Waibel (1933), applying the terminology of plant ecology, called "the transformation of a hygrophilic people into a xerophile people."

Certainly, this transformation of a maritime-agrarian complex into a primarily stock-raising culture, analogous to the similar first millennium B.C. transition, raises a number of questions. For example, what was the relationship between celestial navigational skills gained either on water, or on land in arid regions of clear skies, an integral connection pointed to by Gumilev. The nomad, in his view, was also able to sever the connection with a settled way of life and normal intercourse and exchange, developing a mode of communication more by way of raids than trade, a pattern destined to continue down to the modern era. But we have to distinguish the Eurasian steppe, Gumilev's focus, from other arid lands and deserts, particularly North Africa and the Mediterranean. As Sauer says about the other possible route for a root stockherding-agrarian complex,

no break between farmer and herdsman is discernible at any time; as the village Arab of today is related to the Bedouin, the environmental specialization may have been present from the beginning: flocks on the mountains and dry lands, fields where moisture sufficed and soils were adequate . . . [as] the less suited the land was or became to plow cultivation, the greater the shift to pastoral economy . . . repeatedly prolonged droughts must have speeded the downslope shift, hillside fields suffering most (1962:549).

But of direct concern here is Sauer's scepticism regarding a purely climatic or environmental explanation for the causes of the Eurasian steppe and its desiccation. Gumilev also stated that the human impact of stock herding and primitive agriculture heightened the affects of desiccation. As the deep plowshare had yet to be invented, a burn-dig-hoe, or dryland equivalent of tropical slash-and-burn, is destructive of soil fertility. As Gumilev and most others writing about the late neolithic proposed, the great human mobility in this
period contributed to this disregard for the landscape. Again Sauer's comments about the Mediterranean in comparison to the New World, are instructive, as each prolonged drought must have left the range depleted, its carrying capacity reduced, and recovery of cover less likely. Natural balance between plants and animals is rarely reestablished under such exploitation, since man will try to save his herd rather than their range . . . the principal difference [between old and new worlds] may be that we have had no millennial . . . overstocking of our arid, semi-arid, and subhumid lands. The scant life and even the rock and sand surfaces of the Old World deserts may record long attrition by man in climatic tension zones (1962:550).

Although Sauer may incline to place the responsibility for desertification more on human than on climatic activity, Gumilev certainly does not deny the component of human agency. It may be a question of emphasis. For Sauer, man is an agent for diffusion. Gumilev, however, stresses the major change brought by climate into the situation within which human agency operates. It is, therefore, primarily this performance setting and ensemble of natural and social elements comprising the human drama which Gumilev emphasizes.

Setting the stage for this period of history are a process of communications and the morphology of its "field," whether unified or fragmented, to which Gumilev now turns. After laying the mantle of knowledge heavily on the shoulders of civilization, he recognizes a major role for the nomads in the process of communications, stating that, the nomad required far more land than the tiller and tribal clashes for pasture lands inevitably increased during the period of growing aridity [and] wars are, of course, a kind of intercourse (1966d:42).

This type of interchange, according to Gumilev, involves (1) adopting an enemy's most effective weapons, (2) captured artifacts, and (3) women and children taken captive and often integrated into the social unit. A broad "similarity in material culture among the Scythian-Sarmatians of the first millennium," would be explained, but such similarity would neither reduce conflict, nor promote a unified field of communications. To illustrate this fragmentation,
Gumilev (1966d:42) cites Strabo's comment that, "the nomads, avoiding intercourse with other peoples and being both more numerous and powerful, barred access to all the easily reached places of the country," (Russian translation, 1954:468). From this comment and all the other evidence, Gumilev concludes that, in such a segmented communications field,

the mode of life of [these] Eurasian nomads . . . despite a similarity of material culture, [indicates that] each tribe was isolated from its neighbor and in a permanent state of war (1966d:42).

This explanation of a type of fragmented cultural communications does not, however, have a strictly cultural basis, as Gumilev points to climatic conditions that would impinge on such a sociological assumption:

this lack of intercourse was further promoted by the growth of deserts. The boundary between the eastern and the Altaic peoples, for example, did not run along the mountain ranges and divides, but through the shifting sands of eastern Uzungaria, where the precipitation was, less than 100mm - a year, . . . [The boundary] extends from the Hami desert in the south to the Sayan Mountains in the north, varying in width with the degree of aridity. In the more humid periods it was relatively easy to cross, but in dry periods it [the boundary] became a serious obstacle so that cultures on both sides developed independently of each other. That was what happened in the period under discussion, when the Altay was dominated by the semi-nomadic culture of the Yueh-chih [eastern Sarmatians], which ended with the Pazyryk burial mounds, and Mongolia gave rise to the well-known Hunnic tribal union (1966d:42).

Before we take note of how Gumilev answers a challenge regarding the ethnogeography of this conclusion, there arises a problem with this identification of a single hearth for both types of nomadism. Gumilev now confronts the same dilemma faced by Sauer's cultural hearths, that is, how to prove the exact source, process and routes of diffusion. But, since no alternatives have been proposed for the exact locus and expansion of the two particular nomadic assemblages, Gumilev's proposal must stand. Yet, the problem with this argument is that Gumilev's model does not recognize the other modes of nomadic lifestyle, or variations on the type, which must have evolved in other local niches within
the broader region, even though arrested in their development, devolving to become extinct or relic types. This very fact, however, supports Gumilev's underlying thesis of ethnogenesis and its life cycle. If a group forms and survives, it expands and is successful in terms of a natural evolution; but if it fails, it withers in the face of more dynamic groups, who are either more successful in competing for its niche, or exert some form of hegemony over it. Taking a step beyond his theoretical conclusion on the Khazar landscape and ethnos, Gumilev begins a discussion on the ethnogenesis of the Hunnic confederation. He argues that the Huns represent a seminal transformation of the newly evolved pastoral-nomadic way of life involving a higher stage of the integration of both natural and social factors in its constitution.

Evidence for yet another change after the rise of pastoral nomadism that followed the demise of the 2nd millennium mixed stock raising agrarian culture is provided by further historical and geographical data. A renewed period of increasing moisture supply in the arid zone provided the opportunity for a new semi-nomadic culture to arise in conjunction with the Hunnic tribal union, which Gumilev claims represents the first major tribal confederation. But in fact, and in Gumilev's model, the data show that the semi-nomadic Yueh-chih were another principal contender for Inner Asian hegemony. Preceding the Hunnic confederacy, that way of life first had to be displaced. Gumilev defends his conclusion that the Mongols reigned to the east and the Yueh-chih to the west, which he had alternatively put forward earlier (1960:39-40, 69-71). This idea was, however, challenged by other sources, (summarized in Grousset, 1960), but Gumilev has found support for his view from Uspenskiy (1880:51) and Laufer (1517:13-14). He reiterates that, despite

the fact that many Yueh-chih lived in the steppe between the Ordos and Tunhwang in the fourth century B.C., and most authors regard that area as the home of these people... [they] could not have lived
in a waterless desert, especially since the piedmont of the Nan Shan, watered by many streams that later disappeared in the sands, was in the hands of the Wu-sun. On the basis of purely historical considerations... [thus] the Yueh-chih did not reach the Alashan steppe before the end of the fifth century B.C. this view finds support in paleogeography, with the additional detail that [they] pushed into the desert belt between Dzungaria, their real home, and the piedmont of the Nan Shan (1966d:42).

Citing Laufer's (1917) monograph on the paleolinguistic structure of the region, which demonstrated that the Yueh-chih spoke a North Iranian dialect distinct from the non-Iranian Tocharian which prevailed in the same region, Gumilev concludes that

the cultural, and therefore ethnographic, similarity of the Yueh-chih with the inhabitants of Semirech'ye thus had its active forms, based on analogous economic activities. The inhabitants of the oases of the Iarim valley, on the other hand, constituted a distinct ethnocultural complex separated from the others by the Tien Shan (1966d:43).

Having addressed the question of what other ethnogenic development was occurring in the region, Gumilev compares the possible patterns. He argues that climatic factors in combination with the region's topography not only coincided with certain social movements, but were also directly involved as constraints and stimuli in the process. In a highly abstracted historical geography of the arena within which the Yueh-chih and Hsiung-nu (Huns), with their respectively different lifestyles, contended for hegemony, Gumilev, citing Petrov (1964:137), discusses factors influencing that difference:

the eastern Tien Shan is a physical-geographic boundary between the extra-arid parts of [Chinese] Central Asia and the more humid areas of Kazakhstan and Dzungaria, which have close floristic relationships. But then the stock-raising economy of the western and eastern slopes of the Tarbagatay should also differ from the southern, or Tocharian, mode of life, which would have to be proved. [This is somewhat proven, in that] the Yueh-chih crossed the slopes of the Nan Shan precisely at the time when they were first mentioned in historical sources [c.400 B.C.]... [which] represented a new stage in the intercourse between Central Asia and the Far East [China]... [and therefore], the interruption in inter-tribal relations coincided with the established period of increased aridity in the steppe...and the two phenomena must have been linked. The Yueh-chih moved
westward and the Huns southward, and both peoples crossed deserts that had been reduced in size (1966d:43).

Some confusion arises over whether the Yueh-chih moved east or west and which desert they crossed, as Gumilev's translator notes that "westward" must have been an error. In reading the maps, I have determined that coming from their northern home in Uzungaria at the southern foot of the Altai range, if they first cross the Hsien Shan range, which runs parallel to and slightly southeast of the Altai, and then over the Nan Shan, which are even further east-south-east -- then it would have to have been an "eastern" movement across the Iakia Makan desert, and possibly the Tsaidam depression on their way to the Ordos. But Gumilev does not specify either the route taken or desert crossed by the Huns as they moved south.

This series of nomadic moves across an environmental field indicates the major ethnoses and their respective lifestyles that were contending for a greater hegemony over some more viable territory within the region. While they probably had formed in the preceding period of aridity and diversification, these groups also continued as social and ethnic formations during the more humid time that followed. Pointing out this continuing difference, Gumilev proposes that it has specific long-term consequences, in that the 500 years of tribal isolation had left its mark. Although the art of the Huns and the Yueh-chih had common roots, it was far from identical, thus suggesting a long period of independent development. The stream of a single Andronovo culture was thus broken by the prism of changes in economy, mode of life and mixture of ethnic types, and divided into a number of channels that did not reunite thereafter. When the Huns and Yueh-chih found themselves in contiguous areas in the third century B.C., they decided by force of arms who was to be master of this once again fertile and populous steppe (1966d:43).

The long-term consequences are clear in the contest's results, as the Hunnic victory over the Yueh-Chih in 165 B.C. resulted in the subsequent trend towards Turkization of the steppe dwellers and nomadic mode of life that lasted into the Middle Ages. The last of the peoples who had retained their settled mode of life resided in
the swamp settlements of the Syr' Dar'ya delta... and in the oases of southern Dzungaria. They [the so-called Sarts] also lost a large part of their ancient culture and only some stylistic aspects that coincided in West and East, and... [thus] the might and grandeur of the Eurasian nomads was preceded by the brilliance and charm of the settled peoples of the Bronze Age (1966d:43-44).

Gumilev concludes this historical-geographic analysis of the fluctuations in the environment and population which had an impact on the processes of social evolution in the Eurasian steppe and discusses the corresponding increasing complexity of ethnos and culture. Gumilev's final statement's significance lies in the fact that it does more than simply restate the basic concept of an integrated development of landscape and ethnos. Rather than just supporting a one dimensional argument that climate determines the direction of human activity, or that human agency determines relations with the environment, Gumilev has set forth a truly integrated model. His interpretation of the embryonic stages of the historical ethnogeography of the Eurasian steppe is based on solid climatic data and a hypothesis of social evolution that seem well proven. His project continues, bringing forth the succeeding permutations of basic patterns established during this core period, adding branches to roots, so to speak.

The final remarks in concluding this chapter on Eurasian Antiquity will now turn back to climate, as the following article traces that basic structure into the next two millennia. Gumilev concludes as he began, discussing "the character of the fluctuation of the level of inland bodies of waters" as the benchmark by which other climatic data is [sic] evaluated. The final "period of the more southerly flow of low-pressure troughs starting in the early fourth or late fifth century B.C.," coincides with low levels in the Caspian, i.e., "below the -32 meter mark," and in theory, a higher level in the Aral Sea and Lake Balkhash. Working backwards, Gumilev (1966d:44) contrasts
this evidence with that of a preceding 500 years of a moist humid zone in which
"the Caspian Sea level was high, between -18 and -12 meters," based on identi-
fying and dating pottery, therefore, "this period would have been one of desic-
cation of Balkash and regression of the Aral Sea." Finally, back to the
second millenium B.C. where the switch again occurred with "a regression of the
Caspian Sea and a transgression of the Aral Sea and Lake Balkhash," and ending
up at

the third and fourth millennia B.C. where times of a very low Caspian
Sea and Balkhash level, probably the complete desiccation of the
arid-zone lakes and a slight transgression of the Aral Sea fed by the
North Iranian branch of the cyclone tracks (1966d:44).

Gumilev has developed a reciprocal model. Building a climatic model
that is inherently independent of human action, he demonstrated how evidence
found in archaeological and historical data of human agency, as well as paleo-
geographic data, assisted in reconstructing climatic conditions. The model
represents a reconstruction of the fluctuating pattern of moisture supply to
the Eurasian steppe over the crucial period of human development during the
last two millennia B.C. Similarly, for the same time period and region, he has
made use of the same sets of data, including climate, to reconstruct a model of
the evolving types of human occupancy in the differing ecosystems. Moreover,
he has tried to show a dynamic interaction between the two models, and in
particular the human adaptive response. He has treated ecological, cultural
and social forms as interactive factors in the human struggle to make the
steppe environment a viable one. As nature changed, people adapted. And as
they adapted, their particular ways of life have shaped aspects of their envi-
ronments thereby creating cultural landscapes. The next chapter presents a
historical geography of Eurasian steppe nomadism from its inception to its
demise, and the landscapes it formed by natural and social processess.
CHAPTER VI

ON HETEROCHRONISM IN THE EURASIAN STEPPE MOISTURE SUPPLY:

THE MIDDLE AGES

Compared to the four millenia of human activity (B.C.) covered by the previous chapter, this section explores a vast increase in the magnitude of human activity from year 1 to 1800 A.D., and therefore is treated even more sketchily by Gumilev. Barely skimming the surface of a historical geography, the intent is rather to set a framework within which more detailed work can evolve, and as the translator's abstract states, "he establishes an absolute chronology of climatic changes related to latitudinal shifts in storm tracks." But we are again dealing with the same patterns of the previous article and no major shifts in either the heterochronic oscillation or geographic distribution of these basic storm paths are postulated for the eighteen centuries in question. Indeed, this raises a question as to how regular a pattern these storm-tracks have maintained over the past six millenia.

In regard to this question, Gumilev provides no indication of any major shifts or discontinuities in the pattern. It is possible that historical climatic data is insufficient to demonstrate more micro-level variations in the spatial distribution of each particular shift from increasing aridity to humidity, and vice versa, for the regions in question. On the other hand, that
lower level of analysis with its attendant increase in data might not be possible within the framework of this overview. It would have been, however, a good move by Gumilev to acknowledge this.

Turning to Gumilev's charts (figs. 5 and 6), raises a question about the lack of any pattern of frequency or of duration in the sequence of moist-dry alternation. For example, beginning with 3400 B.C., the cyclone tracks show a northward tendency lasting for ten centuries. This tendency corresponds to aridity in both eastern and western steppe, with increasing moisture in the humid zones. A further 1200 years of the northern cyclonic path is marked by no change in the arid zone but an even greater moisture in the humid zones. Then, around 1200 B.C., the cyclones shift southward to a middle track for two centuries corresponding to growing aridity in the humid zones of both China and the Near East. Over the next 500 years they shift further south, inducing a switch in the moisture supply and providing greater amounts to the arid zones and less to the humid zone.

While the chronology could continue up to the 19th century, treating each century separately, no other regular diachronic pattern can be discerned. In general, the cyclone paths were southerly for the 5th to 9th centuries which were moist for the steppe and for China, but arid for Europe. After a brief reversal for a century of aridity to the steppe, in which the cyclone path drifted to its middle latitude, it moved back south for the following two centuries, returning moisture to the steppes. But from the 13th to 19th centuries, the cyclone tracks have kept to their middle range except for a shift north in the 16th century, bringing a brief xerothermic pattern of aridity to the entire Eurasian landmass, continue up until the present for the arid zone and for China which has also had predominantly dry weather since the 13th century. By contrast, the European humid zone has had predominantly moist
weather over the same 700 year period. A heterochronic pattern of irregular frequency thus seems to dominate, and Gumilev does not seem to be constructing any regular, cyclical model of history. His model does, however, demonstrate that during any one period of indeterminate length, moisture is either in the arid or the humid zone, but not both, the only exception possibly being the 12th century, while an across-the-board aridity has occurred only twice, in the 3rd and 16th centuries. During the preceding three millenia, for which paleoclimatic evidence would be less reliable, there were no instances of an across-the-board period of either aridity or moisture. We can thus conclude from Gumilev's data that over the past five millenia a heterochronic pattern has by far predominated, as the steppe zone been mostly dry and the humid zone moist.

While the past 800 years have been dry for the steppe and China, this does not appear in the long term to be a fixed trend. If Gumilev's model is correct, the reversal could happen at any time and also last for an equally unspecific length of time. Therefore, unless this model is expanded to include other factors such as average temperature and a global distributional pattern of moisture and temperature, then its effect is to demonstrate certain correlations between shifts in the distribution of moisture in Eurasia and human activity. Gumilev neither extrapolates a deterministic model, nor proposes that the correlations can be taken to a more local, short-term level to explain more specific historical events. He does, however, claim that his method avoids a "geographical determinism," as it is based on,

a rather full and precise knowledge of events ... since the 1st century B.C ... [and] guided by the principle that the natural environment exerts a permanent influence on forms of human activity, [and yet] even the most primitive human societies display spontaneous forms of development ... [having] therefore, chosen the approach of ethnogenesis and migrations over a wide area because such a method makes possible mutual compensation of inevitable particular errors and ... [we] have tried to reduce the margin of error by making comparisons with the paleogeography of the Holocene (1968a:23).
In order to expand an empirical generalization into the Middle Ages, and demonstrate how the Huns and their nomadic successors responded to social and environmental conditions, Gumilev has to surmount the controversial problem of "post-Wurm period climate change." Gumilev (1968a:24) resolved this problem by working with an explanatory model developed by A.V. Shnitnikov (1957), whose chronological framework of periods of increased and decreased moisture supply . . . supplemented with a statement on the heterochronous character of the moisture supply in the arid, humid and polar zones, explains the situation as follows: an increase in moisture in the arid zone has been accompanied by a decrease in the humid zone, and an increase in the polar zone has been accompanied by a decrease in the humid and arid zones and by an increase in the sub-tropical zone, especially in the river valleys of the Tigris and Euphrates in the Middle East and of the Yellow River and the Yangtze in the Far East. Based on this model which has been supported by a number of previously cited sources, Gumilev (1968a:24) can now propose and describe a model that accounts for the primary geographical patterns intrinsic to the panorama of succession of peoples in the steppe zone of the Eurasian continent, where the relationship between the areas of grassy steppe, forest, and desert determine the character of the economy . . . in contrast to the relatively stable climate of the Mediterranean area . . . has been highly sensitive to any climatic changes. As a continental bioregion with a narrow margin of ecological stability in its harsh environment, it also becomes highly sensitive to human agency, and Gumilev (1966d:24) expounds an interactive theory in which both a moisture decline, associated with an expansion of the desert, and a moisture increase, involving an advance of the forest, have had equally harmful effects on the steppe population and its economic potential. Consequently, changes in economic forms correspond to changes in climate and at the same time, fluctuations in the level of inland water bodies. And climate changed quite rapidly.

The premise that inland water levels can, and do, change both in large quantities and rapidly was substantiated by Gumilev's field studies of changes in the Caspian level and corresponding effects on Khazaria, and also by other previously cited theoretical and empirical work, (Abrasov, 1962;
Appollov, 1956; Berg, 1949; Buchinskiy, 1957). Based on field work, Gumilev (1968a:24) advanced a theory of Central Asian desiccation, identifying key points in Caspian level fluctuations . . . [he was able to] interpolate the intervals between these points, and to obtain a rather clear picture of the climatic change in the study area.

Shnitnikov's theory of zonal climate, when correlated to reliable empirical evidence for the Caspian and surrounding region, was able to support a revision of history begun by Berg's (1949:208-12) challenge of traditional historical theory of the Caspian levels (i.e., Kovalevski and Komorov, cited in Appollov, 1956:211-13). The historians had proposed that the Caspian rose above mean global sea level during the first millennium B.C., but Gumilev's archeological and paleo-geographical field work absolutely proved that it "has maintained its low level over the last 15,000 years," and had it ever reached that level much of the Kalymuk plain, where numerous archeological sites from the period have been discovered, would have been under water. Possible confusion over geographical information derived from ancient sources but unsubstantiated by modern physical geography could have led to this mistake.

Investigating an anomaly in Shnitnikov's theory, which tended to follow the historian's information, Gumilev found a problem with the source for the story of high waters from the Amu Dar'ya presumably rushing into the Caspian sea through the Uzboy channel, which would have put the Caspian higher than it actually was based on the field data, and with the fact that this was an arid period in both theory and evidence. Also, Gumilev's analysis of historical texts (Bartol'd, [no date]; Jordanes, [trans.] 1960), identified the Amu Dar'ya's source in the Pamirs, and thus it would have had to cross several major depressions (Sarykamysh and Asake-Audan), which would have caused enough evaporation to result in run-off through the Uzboy channel at, "not more than 100 cubic meters a second, an amount obviously inadequate to raise the level of
the Caspian," but seemingly enough for a torrent, or as the record stated, "a waterfall." Gumilev also describes careful field measurements of terracing and other geomorphological evidence to support the revision of what had been an erroneous theory based on the lack of an integrated methodology.

Using the corrected model of moisture distribution for the period in question, Gumilev is able to correlate the data to prove that the arid zone was undergoing a period of increasing moisture between the 4th and 2nd centuries B.C., during which, as other historical sources (Gumilev, 1960:192) indicate, "the Huns were raising crops in Dzungaria, while contemporary Chinese accounts state that Hunnic tribes grazed huge herds in the Altay and south of Lake Balkhash and reported seizing thousands of head from them. Moreover, as Gumilev (1968a: 25,28) points out, "this happened in areas that are now desert." But, furthermore, a second semi-nomadic confederation, "the K'and-chu state, extending from Tarbagatay to the middle course of the Syr-Darya... was able to muster as many as 200,000 horsemen.

From another perspective, Gumilev found that in an ancient cartographic source (in Bichurin, 1953:111), "the Chu river is shown emerging from the Issyk-Kul' and ending in a large lake," yet today the same river "disappears into the sands," no longer connected to any lakes. Another confirmation comes from geological findings (Kikhter and Samsonov, 1961), of peat, marine sediments, the character of plant remains, etc. situated and dated so as to "suggest a cooler climate compared with that of the present." Finally, ancient texts (in Bichurin, 1953:941) show that, during this period, "the Huns lived on the slopes of the Yin Shan and greatly valued the area because these mountains were rich in forest and grass and abounded in birds and game," while according to Ovkiyenko's (1954) geography of Inner Mongolia, that area is now "generally a desert lowland, with a few hills and gorges." Gumilev concludes that,
it is evident that 2,000 years ago the area covered by pastures and, consequently, the landscape were quite different from what they are now. But that is not all; there were also periods of moisture decline in antiquity. And the history of the Huns was extremely sensitive to such a trend -- the Hunnic state died out (1968a:28).

Therefore, having brought a number of different, but correlated and empirically substantiated, perspectives to bear on the problem of moisture distribution, Gumilev has proven both his method and his point that this was a period with "a higher moisture level and a relatively dense population of these areas."

In assessing Hunnic history, can purely climatic conditions account for their demise, or even for the desertification experienced, the results of which are so evident today? Could not this desiccation cause less of an impact than human agency, such as Sauer pointed towards for an explanation of the Mediterranean degradation? In general, the answer for the steppe zone is more straightforward in that the scale is much larger and climate more severe than that of southwestern Eurasia and even Saharan Africa. Temperatures rise into the +30's c. in the short summer and plunge to the -40's c. during the long winters, frost free days are far fewer, absolute sunshine much less, and a host of physical and biological features of the landscape both restrict its overall fertility and carrying capacity, and make it extremely sensitive to loss of moisture. While human agency in the form of poor agrarian land use and range management practices has certainly accumulated over centuries, its impact could not account for either the long-term climatic effects or the rapid fluctuations evidenced by the geographic, archeological and historical data integrated within Gumilev's method. The answer is, therefore, an integrated response, in that Gumilev also finds these steppes sensitive to internal ecological mismanagement and even secondary effects of external political factors. But it is clearly the climate that dominates the ecological viability of pastoral nomadism and of mixed land-use, and thus Gumilev finds that, in the case of the
Hunnic state's demise, although there were, of course, many external political factors behind the collapse of this great nomad empire, but not more than usual and as late as 90 A.D. the Huns still retained hegemony in the steppe . . . [but] it was only when the steppe began to dry out, when their sheep died and horses starved that the supremacy of the Huns ended. Beginning in the 1st century B.C. . . [there were] cold winters and extraordinary droughts . . . crop raising initiated by the Huns ended. It was obvious that the process of transition to a more arid climate had advanced so far during this period as to affect not only the nomadic but also the sedentary mode of life. We can thus explain the depopulation of the northern steppes in the 3rd century A.D. in terms of a reduction of pasture lands and . . . as the culmination of that phase of desiccation (1968a:28).

Though not stating it, Gumilev must have been aware of the human role in landscape degradation and known that difference between desertification and a major, long-term drought, even extreme desiccation associated with a uniquely harsh aridity, is somewhat attributable to the negative environmental impacts of human misuse. That he does not seriously comment on it here, although having done so earlier, leads me to believe that, in this instance, the evidence for the extreme role of climate is so overwhelming that human agency was by far a secondary consideration. On the basis of this assumption, Gumilev's (1968a:28) evidence points, for example, to the historical fact that not only were the Huns weakened by the desiccation of their rangelands, but, even the victors over the Huns, the Hsien-Pi people, had to seek refuge on mountain slopes and around lakes that did not dry out. Having conquered the Khalka region -- present Outer Mongolia -- the Hsien-Pi did not settle there, but remained on the southern margins of the Gobi, as far as the eastern Tien Shan. The desiccation made it impossible for them to maintain their former way of life.

Were there political considerations as well as environmental causes for the break-up of the Hsiung-Nu? In earlier research on Hsing-Nu-Chinese relations during the Han Dynastic periods, (Brownson, 1974), I found that while climate played an immeasurable role, much of the relationship was based on trade and tribute, and the following points must be included in the equation of
Hunnic decline:

(1) the luxuries of sedentary civilization are desirable, yet the life of the common peasant and the social controls under that system are not. .. raiding, therefore, results partly from that condition, partly to supplement food and fodder in times of drought, but (2) as the Chinese state grew stronger, garrisoning its borders and building walls, raiding became more difficult. (3) This led to the development of mercenary relations [i.e., using Huns and other nomads as frontier guards], and of tribute, or bribery not to raid, and a resulting dependence [of the nomads] on those grains and luxury goods. (4) Such a process of contact also led to the spread of the concept of a state, or powerful alliance under one leader in order to better exploit the sedentary people, first through raiding, and then by accepting tribute. This led to a counter force, or action-reaction situation without which the basis for a tribal confederation maintaining a state organization is weakened (1974:4).

The following model illustrates how these relationships constitute a process:

(1) favorable environmental conditions lead to an expansion of the nomad population and herds, and hence a growth of raids further expanding both territory and organization; (2) a treaty is concluded by the Chinese paying tribute to the nomads which reduces expansion, but causes a weakening of the state organization involving internal dissention and fragmentation among social units; (3) some of these social units move into a more dependent tribute status as Chinese vassals, while others expand their mobility in other directions, and once again become more dependent on natural conditions. The results of those absorbed into the Chinese economic sphere is that they strengthen the Chinese state, making it more defensible against other nomadic incursions (1974:4).

After reading Gumilev, I would revise this model to include negative climatic impacts as a possible basis for nomadic expansion and incursions. But specific to the demise of the Huns, at a certain point the Han policy of "using barbarians to fight barbarians" worked to Han advantage, in that paying a few to defend China against others was cheaper than paying them all. Moreover, the drought which brought an increasing demand for grain and grazing lands on the part of the nomads, also weakened China's economy, displacing many peasants who might just as well have been recruited as soldiers, rather than becoming bandits or disrupting the stable regions. As the Chinese state became less willing to pay tribute, it also was more able to fight, while the nomads were
weakened and more easily recruited into the Chinese forces at a lower cost than either overt tribute or the expense of damaging raids. In fact, nomadic cavalry units were integrated into Chinese armies which then took the offensive, effectively raiding into Hsung-nu territory. Therefore, while events arise out of actual landscape conditions, they are more complex than Gumilev states. The Chinese state probably had more of a continuous relation with steppe nomads than did other civilizations, and hence a greater impact on events in Central Asia up to the modern era. The pattern, however remained more or less the same as the preceding model (Brownson, 1974), except where nomadic vassals of federations actually succeeded in conquering the Chinese state, only to become even more rapidly absorbed. Therefore, there is no need to repeat the scenario, with the particular variants of each succeeding cycle. But finally, a note in defence of Gumilev's more environmentally oriented position, limited as it was by the brevity of the article and need to discuss climatic conditions: in his longer work on the Huns (1960), he also takes a more integrated stance including much of the same information with which I was working in the political-economic history of Han-Hsiung-Nu relations.

The saga continues as Gumilev wends his way between data from the natural and historical fields, treating the human landscape and its encompassed populations of specifically adapted, or ethnic, H. sapiens and their accompanying ways of life and animal herds, as one more factor in a natural history of the region. Switching to physical data, however, Gumilev (1968a:29) cites Berg (1951) on the salinity of Lake Balkhash, which indicates a drying out during the 3rd century, and subsequent refilling. This physical data is supported by historical references to maps of that period indicating it as having receded to its deepest part, while "the Issyk-Kul' was also lower... and the Aral Sea became... quite shallow." Continuing to integrate methods, Gumilev is able
to correlate the above evidence with the following conclusions about historical patterns of migration, supporting his description (1968a:29) as follows:

historical sources report a sharp decline in the population of the steppe zone during that period. The Usuns retreated into the Tien Shan; the Yueh-p'an, a division of the Huns, settled the slopes of the Iarbaqatay; the once-rich K'ang-chu dwindled to nothing. The absence of any external political factors that might have caused the decline of these peoples suggests that internal factors related to . . . [their, natural] mode of life . . . played the deciding role [as] their economy depended entirely on their holdings of cows, sheep, and horses, and these animal numbers, in turn, were determined by the availability of pasture land. Consequently, in noting a weakening of the K'ang-chu . . . a decline of population growth, we can, by a reverse process of thinking, conclude that the area of pasture declined, which, in turn, would suggest a temporary increase in aridity.

Following the logic that tracks back the decline of a people to a decline in their economic base, which indicates a shift in climate, and in this case, towards aridity, Gumilev's "see-saw" model then necessitates an increase in moisture in the humid zone. If we again find this correlation, it should be one more brick on the foundation of the model, and here Gumilev (1968a:29) has reliable data from the Caspian Sea, citing Rikhter's (1961) physical evidence from sediments, that "a transgression, in fact, did occur at the end of the 2nd century, to be succeeded by a slight regression about the 4th century." Furthermore, historical evidence points to a series of migrations, indicating a nomadic response to this temporary increase in moisture to the arid zone, corresponding to the Caspian data that suggested the moisture balance had once again tipped eastward into the arid zone. Gumilev describes this change:

starting in the middle of the 4th century, the Teleut migrated northward, the Jou-jan found space for life; a little later the Ashina moved northward, and there seemed to be enough room for all. There was fighting for power, but not for land; in other words the very character of the struggle underway by the end of the 5th century suggested a growth of population, of the economy, of resources, etc., . . . [therefore, he concludes that] the actual process of migration of Jou-jan refugees and of scattered Teleut tribes became possible only with the appearance of unoccupied pastures. Otherwise the aborigines would have offered resistance to the new-comers to such an extent that it would have been recorded in Chinese chronicles . . .
[which have] not a word about military clashes . . . [Thus, they] must have occupied empty lands. And since nomads tend to make full use of any available pastures, it must be assumed that new grazing lands made their appearance, in short, a period of increased humidity had begun, (1968a:29).

It is difficult to argue against such a logical weaving of multivariate evidence, so that I must assume that this seemingly random, see-saw fluctuation of moisture must certainly account to a great extent for migrations of the kind Gumilev has just explained. But a secondary factor must be considered: first, the lack of human occupancy and of corresponding pressure on the lands from domestic herds would have given the landscape time to recuperate; and secondly, the land was still at a "safe" level of degradation where it could recover in a few generations of fallowing, despite a drought. As other evidence points out (Bagi, 1980), despite changes in the general circulation of the atmosphere, that factor cannot be solely responsible for the vast amount of desertification over the past 3,000 years. Or, as Cloudsley-Thompson (1977) points out,

removal of the vegetation by overgrazing increases the albedo [reflectivity] of the land surface, and this may inhibit rainfall. Furthermore, fine atmospheric dust can cause an inversion of temperature so that the air is hotter at higher levels, than nearer the ground. This prevents the formation of rain-bearing cumulus cloud (1977:41)

From the strictly ecological perspective, overgrazing can take an ecosystem, its vegetation and soils, to the point of no recovery. Moreover, the behavioral and physiological adaptive changes by both plant and animal make for an ecosystemic entrenchment, which increasing moisture among other climatic phenomena, such as diurnal and seasonal temperature changes can affect, but only up to a point if soil fertility is reduced beyond a certain level and lose the ability to support vegetational recovery.

Given the necessary conditions for recovery, and triggered by an increase in the prevailing moisture supply, the Eurasian steppe has demonstrated remarkable recoveries over these past three millennia. This new stage of a
moister steppe during the 6th through 12th centuries produced, according to Gumilev, "a flowering of nomadic culture," allowing such a repopulation of the formerly arid steppe that,

the great Turkut khaganate of the 6th and 7th centuries that rivaled China, Iran and Byzantium and based its economic power mainly on local resources could obviously not have derived its strength from a sterile desert . . . [and] raids against China suggest that the Gobi could be crossed relatively easily by horsemen . . . so that, the southern boundary of the grassy steppe must have been farther south than [at present, as] . . . the Turkuts carried no fodder with them. [And] in the 8th century . . . renewed crop raising in Mongolia and . . . having occupied the entire steppe zone, made no attempt to advance northward . . . or southward . . . the grassy steppe, broken by wooded mountain ranges, was their habitat. They were not adapted to other conditions and had no desire to adapt themselves (1968a:30).

This latter point about adaptation will play a significant role in Gumilev's later theoretical work on ethnogenesis. He assumes that an ethnos adapts to a single environment and in changing their landscape they would be changing their ethnic character.

The necessary proof of a moister period and its correlation to the obverse in the humid zone, or the model of heterochronism, comes again from the Caspian. The Caspian sea level was found to be at a low level during the period coinciding with "the flowering of nomadic culture" in the steppe. The only fluctuation was a brief rise "by about 3 meters," in the 10th century. This temporary moisture shift corresponded to a crisis in the steppe, triggering, as usual, larger chain reactions. As Gumilev, citing Karamysheva (1960) and Artamonov (1962), describes this sequence,

the Karlucks moved in the middle of the 10th century from the Balkhash area to Fergana, Kashgar, and what is now southern Tadzhikistan. The Pechenegs left the shores of the Aral Sea in the late 9th century and moved into the southern Dnieper basin; followed by the Ghuz, who settled between the Volga and the Uralis. This migration was not on a large scale, but it is significant because it coincided with a change in the level of the Caspian Sea, thus confirming our hypothesis . . . [as] here are no grounds for attributing these movements to major political events (1968a:30).
Political events in the 10th century seemed to correspond to this minor climatic shift and subsequent opening of new lands for the nomads, rather than significant external factors. But the major eastward movements of the nomads, according to Gumilev, "took quite a different turn," for in the middle of the 9th century the Uighur khanate was overrun by the Yenisey Kirghiz in a violent struggle. Central Mongolia became depopulated. But as soon as the Kirghiz, under pressure from the Kitan in 915-26, were forced to retreat into the Sayans, Mongolia was again rapidly settled by the Tatars, the Keraits, the Naimans and other tribes. The flourishing steppe again attracted people and, despite a bloody war, did not turn into a desert (1968a:39).

Not all strife, therefore, is caused by climate forcing the nomads to move, not can a period of rich pasturage be solely the cause. To view a more complicated set of factors, Gumilev next takes into consideration the rise of the Mongols.

The thick forests of Mongolia in which the young Temujin hid out from his enemies as he grew into the formidable warrior and chief known as Genghiz Khan, are now virtual scrub deserts. Further physical evidence for a humid phase in Mongolia at this time is derived by Gumilev from "a 9th century map [which] shows Balkhash as a large lake with outlines resembling the depression of the combined Balkhash-Alakul basin." The method by which such maps can be used as reliable data is discussed elsewhere by Gumilev (1960, 1970), but the correlation with known physical possibilities, as in the case of Lake Alakul as studied by Kurdyumov (1951), can make such data both valuable and reliable.

Another historical description drawn from Bichurin (1953), states that "Joannes de Plano Carpini reported that . . . in the 13th century . . . he travelled seven days around Lake Balkhash." Here, Gumilev shies away from contending "that Balkhash and Alakul' were joined at the time . . . [although] the Sary-su and Chu rivers, which now disappear in the desert sands, formed large lakes in the 9th century." But such historical-geographic reconstructions of the biophysical landscape is no doubt both intentional and implicit in his method.
Corresponding to the rise of Balkhash and Alakul' in the 10th century, the Caspian rose to the -29 meter mark. But this was "not its last one," as Gumilev (1968a:31) finds that another, "rise at the beginning of the 14th century was highly destructive on the littoral cultures." Citing historical reports contemporary to this period, in Berg (1949) and Dorn (1875) Gumilev found comments by: the Italian geographer Mario Sanuto, who wrote in 1320 that the rise had already destroyed "many fine cities;" his Moslem counterpart, Nadjati, who noted that, "by 1304...the port of Abaskun was flooded"; while Kazvini in 1339 attributed this rise to "a change in the course of the Amu Dar'ya," flowing into the Caspian and flooding it. Here Gumilev encounters some controversy, as Berg (1949) and Appolov (1956) doubt that the level exceeded the -23 meter mark, as reported in 1400 by the Arab geographer Bakui, who stated that, "the water level stood at the mosque," in Baku, thus reaching the -20.72 mark. Gumilev's own field research, however, has shown that the Caspian sea level actually reached -19 meters during this period. From his archeological recovery of contemporary Turkic pottery shards, found only above the -18 meter mark, Gumilev concludes that any remains below that level would have been covered by marine sediments, again proving the importance of an integrated dating method.

Turning to the later rise of the Mongol empire, Gumilev (1968:31) states that "a shortage of pasture land, associated with a hypothetical progressive desiccation of Central Asia, has been cited repeatedly," as the dominant hypothesis for explaining the cause of their 13th century advance. This hypothesis had been challenged earlier by Berg (1951) and Grum-Grimm-Grzhimaylo (1949), with both of whom Gumilev agrees, as most certainly "the beginning of the 13th century was marked, not by desiccation, but by the peak of a period of increased moisture in Central Asia." Moreover, he finds nothing in common
between previous natural emigrations of the 3rd to 10th centuries in which people fled from drying landscapes, and these new events, best described as campaigns of the small but well trained hordes of Jenghiz Khan and his successors [who] achieved their foreign political aims by military means, and it was an abundance of livestock and people that provided these means . . . [especially since] most of the Mongols returned to their homes, and only an insignificant number remained in the conquered lands (1968a:31).

Gumilev has also found that Mongol military colonies in conquered lands were relatively small in this period, despite their later scattering as far as Yunnan. Moving back to the geographic factors, Gumilev further concludes that migratory conflicts during the 13th century cannot have been attributed to desiccation, and must have been triggered by other causes, possibly an ethnogenic pulse. During the following century, however, another climatic shift dramatically undercut the base of Mongol power and desiccation continued on into the 16th century, as Gumilev (1968a:32) found,

at the end of the 13th century the zone of maximum moisture shifted from the Tien Shan to the upper Volga, which . . . produced the tremendous rise of the Caspian Sea level; in the arid zone . . . a regression from optimal climatic conditions . . . led to a crisis in the nomad mode of life at the beginning of the 14th century and a decline in the military potential of the Yuan dynasty, [as] by the 1370's the Mongol khans no longer had the strength or means to resist the Chinese, who thus overthrew the Mongol domination.

Again risking the quicksand of an oversimplified model, Gumilev has built his case for the Yuan demise on climatic conditions, while the anomaly of Mongol rise during the prior century's period of benevolent climate is attributed to social causes. Not to challenge the facts of climate, nor of history, one might question by what criteria he makes a judgment as to when the latter is not caused by the former. Given the lush steppe during Temujin's rise to Jenghiz Khan of the Mongol confederation, why was there so much strife and political conflict among tribes and even within them, as clan fought against clan. Was there room and pasture for all, or had the combined population of
people and herds expanded to a point of straining the carrying capacity of these blossoming steppes. Would there not be an important environmental factor in this period of conflict and rise of the Mongol confederacy. On the other hand, how could the sinicized Mongols of the Yuan be affected by a desiccating steppe, ensconced in their political power and able to turn out peasants from marginal agricultural lands to convert them to range lands. Could not the long series of campaigns and conquests have taken their toll on Mongol manpower, especially as these colonial outposts may have integrated to a certain extent with local populations. Moreover, the politics of China has always constrained any ruling dynasty not fully integrated with the agrarian gentry and bureaucracy. In the Mongol case, a shift southward by the fleeing gentry established a southern power base and cultural drift which undercut the absolute hegemony of the northern plains, forming a new balance of economic and social power. Without going into much detail, I would conclude that a crash of the steppe ecosystem could hardly have caused the demise of the Yuan without further social factors having a greater significance that alluded to by Gumilev.

Though there is a variety of opinions as to the Mongol demise which could be summarized, the socio-historical approach is well represented by Blunden and Elvin (1983) as follows:

the fragmentation of the Yuan empire... was the result of the combination of two causes. One was the latent social unrest, the roots of which lay in the harsh conditions of the serfs and servile tenants who worked the great landed estates of this age. The moment that political control weakened, this unrest would break out into uprisings, often associated with the White Lotus sect brand of millenarian Buddhism.... The second factor was the inability of the Mongol regime to put together a stable political system that was acceptable and yet capable of containing its more influential subjects, whether Mongols, Central Asians, or Chinese (1983:102).

Continuing to describe these events, Blunden and Elvin focus on internal problems within the Mongol aristocracy as well as increasing tensions between these
rulers and their administrators, mainly drawn from Central Asian and Chinese
gentry. This civilization was split into northern and southern worlds, with
increasing power in the south, corruption, a replacement of the hardy warriors
of the conquests by their more comfort-oriented offspring, peasant risings
against the gentry and government, both Chinese and foreign. As Saunders
(1971) summarizes it,

the last days of Mongol rule may be compared to those of Manchu rule
in 1911-12: a paralysed administration, a divided ruling clique, an
explosion of national hatred against alien rule, and a popular revo-
lution originating in the south, sweeping up through the Yang-tse
valley, and finally engulfing the northern capital (1971:151).

At this very last instant, a civil war broke out among the Mongols and reinfor-
cements coming from Mongolia were fighting against the best Mongol troops of
the Yuan in a fruitless conflict, leading to an intensified weakening of both
their Chinese empire and heartland state. As these sources do not mention
climate, do we have the sociocentric versus environmental perspectives unwill-
ing to reach an agreement. Gumilev is silent on this problem as he reaches a
critical point in both his argument and Inner Asian history in general. Surely
the Mongol demise is a complex and multifactoral phenomenon. It is the last
effective steppe empire, as the hollow centre again divided eastern and western
worlds, with adaptation at each end. The Oirats and Manchu were successful
within their respective spheres, but never again would the steppes give rise to
great empires stretching between east and west. Secondary sources confirm a
major impact on the social and ecological potential of steppe tribes during
this long-lasting desiccation, including a desertification process, undoubtedly
caused by a combination of climatic and human agency, but the direct links need
to be better established. Therefore, such an occurrence deserves more treatment
by Gumilev to prove his climatic argument, even though he moves on to discuss
physical evidence for this climate shift.
Once the desiccation set in, the steppe has progressively deteriorated excepting for brief spurts of moisture, which for the most part remained in the humid zone. A northward shift of the cyclone tracks has been proposed and correlated to evidence of climatic phenomena, increasing "related to higher cyclonic activity... in Russia after the 16th century." Associated with other evidence of a "significant accumulation of precipitation" in northwestern Europe, such as advances of glaciers, this cyclonic shift meant that the Caspian Sea level dropped again, continuing to do so "for more than 60 years."

Gumilev's underwater archeological work on identifying and dating architectural remains "established that the Caspian Sea level in 1587 was at -28 meters."

But as this period also had its shift, the Caspian level began again to rise, confirmed as Gumilev (1968a:33) notes, by a report in 1623 which suggests, the episodic character of the drop of the Caspian Sea level in the 16th century and, consequently, a renewed southward shift of storm tracks into the Volga basin. This is confirmed by the fact that part of the Amu Dar'ya flowed along the Uzboy [channel] about 1500. The Sarykamysh depression was then a freshwater lake... the large discharge can be explained by the fact that a northward shift of storm tracks is associated with a relatively small flow of humid air masses, the so-called North Iranian cyclone, that feeds the source region of the Amu Dar'ya but does not affect the overall climate of the arid zone, whose desiccation continued in the 16th century.

Correlated to the historical data, this micro-regional anomaly skips the larger arid zone, in which again the nomads abandoned their steppe homelands. The Mongols migrated to Tibet, the Uzbeks to Mavera-un-nahr [Transoxiana], and the Kalmyks to the lower Volga... no longer organized campaigns... tribes and their leaders were in search of water and pasture for their herds... marking the beginning of the end of the Central Asian nomadic culture since the cyclones of the 18th and 19th centuries carried their moisture into the humid zone, and in the 20th century into the Arctic... the conversion of the Central Asian stepe into desert continued (1968a:33).

Avoiding a geographic determinism in regard to the cultural features of these populations, Gumilev warns against concluding that
increases in the moisture supply of the arid zone directly changed the character of its inhabitants or affected the success of a particular operation . . . [rather by] improving living conditions, the increased moisture simply attributed one more factor favoring victory, and there were tribal chieftans who knew how to make use of it. But the absence of such potentialities, all other things being equal, rendered the situation hopeless. This is what happened when the desiccated steppe was no longer able to offer resistance (1968a:33).

The fact of climate as an important, if not deciding, factor in the equation which explains the historical geography of the steppe is further demonstrated by Gumilev in an example of the last great tribal grouping, the Oirats of Dzungaria who were able to resist Manchu power only so long as they had the mountain runoff from the Tien Shan and Tarbagatay for moisture. But as "the Gobi in Mongolia expanded . . . extending northward and southward," in the 17th century, Gumilev cites Grumm-Grzhimaylo's (1933:473) reference to sources that described the scene as one in which

All Mongolia came into motion as the Mongolian leagues and tribes scattered in search of water and good pastures, so that their military forces no longer formed a single whole (1968a:33).

Gumilev describes this sequence of events as witnessing

the last nomadic power of Central Asia, the Oirat [Burjat-Dzungarian, which] finally fell before the onslaught of the Manchus in 1756-58, despite the valor of the steppe warriors and the ability of their last leaders. It was a repetition of the fall of the Hunnish state in the 1st century A. D., with the same climatic and landscape changes and the same landscape relationships (1968a:34).

And so ends Gumilev's historical geography of the steppe in relation to a relatively stable spatial pattern which distributed moisture either to the humid zone or arid belt, although randomly over time. He has not tried to correlate this pattern to larger theories of global climate, although it fits well into such currently developed schemes. In particular, Bryson and Padoch (1981:12-13), have developed a generally accepted chronological and categorical system to organize an explanatory framework more deterministic than envisioned by Gumilev. Some thoughts on climate and history by Princeton historian, T. K.
Rabb (1981) generally support Gumilev's method, and especially his insistence on a chronological table, as Rabb states,

historians and the climatologists are now in much the same situation as Ranke was when he began to study diplomatic history -- before they can do anything else, they have to establish a basic chronology. For this task it is crucial that all possible sources, whether proxy data, or manuscript evidence, be combined (1981:255).

Commenting directly on this problem and the requirements for developing this historical-geographic method, Rabb cautions that,

not until a reasonably firm and widely accepted chronology of temperature and precipitation levels is established, including annual means, intra-annual variation, and monthly data whenever possible, will it be possible to move ahead to more sophisticated analyses of human adaptability or man-made climatic change (1981:256).

In conclusion, however, Rabb makes an optimistic appraisal of research such as Gumilev's, and the direction in which it could progress as an operational framework, stating that, rather than separate work, a more promising objective would be the development of a special form of analysis. Having examined the effects on one another of climatic change and human action, researchers could strive to establish the range within which these mutual influences operate. It is surely more important to prove that one holds consequences for the other, than it is to work out the mechanism and limits of those consequences (1981:257).

The relationship between climate and landscape as mediated through ethnos is continued in the following chapter which introduces more historical data.
Fig. 3: SUMMARY TABLE OF MOISTURE CHANGES IN THE EURASIAN CONTINENT - I  
(based on the data of paleoethnography)

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<td>34-25 North</td>
<td>Aeneolithic immigration (A)</td>
<td>Afanas'yevo cult. (A)</td>
<td>Neolithic (AM)</td>
<td>Yangshao cult. (M)</td>
<td>Egypt's Old King. (M)</td>
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<td>24-22 North</td>
<td>(A)</td>
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<td>&quot;World-wide Deluge&quot;</td>
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<td>22-21 Mid.</td>
<td>Catacomb cult. (A)</td>
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<td>Bronze Age (M)</td>
<td>Lungshan (MA)</td>
<td>Sumer Akkadia (MA)</td>
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<td>20-13 South</td>
<td>Hewn-timber cult. (M)</td>
<td>Andropov cult. (M)</td>
<td>Fat'yanov cult. (A)</td>
<td>Shang dynst. (A)</td>
<td>Assyria &amp; New King. (A)</td>
<td></td>
</tr>
<tr>
<td>12 South</td>
<td>(M)</td>
<td>Huns move North (M)</td>
<td>(A)</td>
<td>end of Shang (A)</td>
<td>Hittites &amp; Troy fall (A)</td>
<td></td>
</tr>
<tr>
<td>11-9 Mid.</td>
<td>Cimmerians (MA)</td>
<td>Karasuk cult. (MA)</td>
<td>Hallstatt cult. (AM)</td>
<td>Chou dynst. (A)</td>
<td>Persia, Media (A)</td>
<td></td>
</tr>
<tr>
<td>8-5 Mid.</td>
<td>Scythians' (A)</td>
<td>Pazyryk cult. (A)</td>
<td>Iberians (M)</td>
<td>end of Chou (A)</td>
<td>Judea (A)</td>
<td></td>
</tr>
<tr>
<td>4 South</td>
<td>Sarmatians (M)</td>
<td>Yueh-chih (M)</td>
<td>Celts (A)</td>
<td>Warring States (A)</td>
<td>Alexander the Great (A)</td>
<td></td>
</tr>
<tr>
<td>3 South</td>
<td>Sarmatians (M)</td>
<td>Hsiung-Nu (M)</td>
<td>Celtic (A)</td>
<td>Ch'in (A)</td>
<td>Hellenism (A)</td>
<td></td>
</tr>
<tr>
<td>2-1 Mid.</td>
<td>Sarmatians (MA)</td>
<td>Hsiung-nu Crisis (MA)</td>
<td>Emigration of Cimbrians &amp; Tutons (AM)</td>
<td>Han empire (AM)</td>
<td>Roman republic (AM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(MA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

code: (M) = moist, (AM) = moister, (A) = arid, (MA) = more arid
**Fig. 4: SUMMARY TABLE OF MOISTURE CHANGES IN THE EURASIAN CONTINENT - II.**  
(based on the data of paleoethnography)

<table>
<thead>
<tr>
<th>Trend:</th>
<th>Arid Zone</th>
<th>Zone of Eurasia</th>
<th>Civilization</th>
<th>China</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cent. A.D.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cyclone Tracks</td>
<td>Western Eurasia</td>
<td>Eastern Eurasia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Middle</td>
<td>Sarmatians (A)</td>
<td>Huns (A)</td>
<td>Han (M)</td>
<td>Rome (M)</td>
</tr>
<tr>
<td>2</td>
<td>Middle</td>
<td>Alans (A)</td>
<td>Hsien-pi (A)</td>
<td>Han (M)</td>
<td>Rome (M)</td>
</tr>
<tr>
<td>3</td>
<td>North</td>
<td>Alans, Huns &amp; Goths (A)</td>
<td>Hsien-pi (A)</td>
<td>Ugrians (A)</td>
<td>Three Kingdoms (A)</td>
</tr>
<tr>
<td>4</td>
<td>Middle</td>
<td>Huns (A)</td>
<td>Jou-jan (A)</td>
<td>Rossomom (A)</td>
<td>Five States (A)</td>
</tr>
<tr>
<td>5</td>
<td>South</td>
<td>Sabiri &amp; Bulgars (M)</td>
<td>Jou-jan (M)</td>
<td></td>
<td>Toba-Wei Great Migrations (A)</td>
</tr>
<tr>
<td>6</td>
<td>South</td>
<td>Avars (M)</td>
<td>Turkut (M)</td>
<td>Antae (A)</td>
<td>Sui (M)</td>
</tr>
<tr>
<td>7</td>
<td>South</td>
<td>Bulgars (M)</td>
<td>Turkut (M)</td>
<td></td>
<td>Tang (M)</td>
</tr>
<tr>
<td>8</td>
<td>South</td>
<td>Khazars (M)</td>
<td>Turks &amp; Uighurs (M)</td>
<td>Slavs (A)</td>
<td>Tang crisis (M)</td>
</tr>
<tr>
<td>9</td>
<td>South</td>
<td>Khazars &amp; Magyars (M)</td>
<td>Uigurs &amp; Kirghiz (M)</td>
<td>Kievan Russia (A)</td>
<td>Tang decline (M)</td>
</tr>
<tr>
<td>10</td>
<td>Middle</td>
<td>Pechengs (A)</td>
<td>Kitan (A)</td>
<td>Kievan Russia (M)</td>
<td>Five Dynast. &amp; Vikings (A)</td>
</tr>
</tbody>
</table>

Source: Gumilev, 1968a:26  
(A) = Arid, (M) = Moist
**Fig. 5: SUMMARY TABLE OF MOISTURE CHANGES IN THE EURASIAN CONTINENT - III.**
*(based on the data of paleoethnography)*

<table>
<thead>
<tr>
<th>Trend:</th>
<th>Arid Zone</th>
<th>Western Eurasia</th>
<th>Eastern Eurasia</th>
<th>Humid Zone of Eurasia</th>
<th>Civilizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cent. A. D.</td>
<td>Cyclone Tracks</td>
<td>Eurasia</td>
<td>Eurasia</td>
<td>China</td>
<td>Europe</td>
</tr>
<tr>
<td>11</td>
<td>South</td>
<td>Polovtsians (M)</td>
<td>Keraits (M)</td>
<td>Kievian (A)</td>
<td>Sung (M)</td>
</tr>
<tr>
<td>12</td>
<td>South</td>
<td>Polovtsians (M)</td>
<td>TatArs (M)</td>
<td>Vladimir (M)</td>
<td>Juchen (M)</td>
</tr>
<tr>
<td>13</td>
<td>Middle</td>
<td>Golden Horde</td>
<td>Warring Khans (A)</td>
<td>Old Russia (M)</td>
<td>Mongols (M)</td>
</tr>
<tr>
<td>14</td>
<td>Middle</td>
<td>Decline of Golden H. (A)</td>
<td>Defeat of Mongols (M)</td>
<td>Great Russia (M)</td>
<td>Yuan &amp; Ming (M)</td>
</tr>
<tr>
<td>15</td>
<td>Middle</td>
<td>Fall of Golden H. (A)</td>
<td>Oirats (A)</td>
<td>Stronger Russia (M)</td>
<td>Ming (M)</td>
</tr>
<tr>
<td>16</td>
<td>North</td>
<td>Nogai (A)</td>
<td>Kalmyks (A)</td>
<td>Lithuania vs. Moscow &amp; Kazan (A)</td>
<td>Ming (A)</td>
</tr>
<tr>
<td>17</td>
<td>Middle</td>
<td>Kalmyks &amp; Kazakhs (A)</td>
<td>End of Mongols (A)</td>
<td>Conquest of Siberia (M)</td>
<td>Manchus (A)</td>
</tr>
<tr>
<td>18</td>
<td>Middle</td>
<td>Kazakhs &amp; Russians (A)</td>
<td>Demise of Kalmyks (A)</td>
<td>Modern Russia (M)</td>
<td>Manchus (Ching) (A)</td>
</tr>
<tr>
<td>19</td>
<td>Middle</td>
<td>Decline of Nomadic Culture</td>
<td>Modern Russia (M)</td>
<td>Ching (A)</td>
<td>Era of Progress (M)</td>
</tr>
</tbody>
</table>

Source: Gumilev, 1968a:26

(A) = Arid, (M) = Moist
CHAPTER VII

ON THE DEVELOPMENT OF A HISTORICAL-GEOGRAPHIC METHODOLOGY

This chapter examines three articles co-authored by Gumilev, two of which appeared outside of the L&L series. Introduced earlier in Chapter IV, these works by Gumilev, and, respectively, Rudenko, Gayel' and Kuznetsov, continue to expand the empirical basis and support for an integrated method. In fact, Gumilev's subsequent work in historical ethnogeography represents an exposition and development of this method. In particular the Gumilev-Rudenko article contains what might be considered a root paradigm for the entire landscape and ethnos project. That is, if ethnos represents the character of a people as an aspect of a natural environment, then it is encompassed by a unique landscape as its geographic situation. Ethnos, then, is both integral to, and emeshed within, the landscape's co-adaptive process of biocenosis.

Published in 1966, the same year as the two preceding articles on heterochronism, this work presents a strong conceptual rationale for them. In fact, up to this point, and including his first book The Huns (1960), Gumilev's publications have dealt primarily with archaeological findings, mostly from the Caspian expeditions. Underlying all his work has been an emphasis on the roles of climate, historical geography and archaeology in a synthetic method of cultural reconstruction. This sequence culminated with the 1966 publication of
his major study on Khazaria. In reviewing this body of work, including "The sources of rhythms in nomadic society," (1966), we can conclude that Gumilev's research focuses on ancient and medieval steppe society.

The venerable Russian pursuit of Central Asian studies seems a quest for roots in a paradox of steppe and sown. But, in paying honor to his predecessors in the first work we discuss here, Gumilev has chosen his co-author and subject well. Gumilev's co-author, S. I. Rudenko, (since deceased) was a respected academic ethnographer and a senior Soviet archaeologist specializing in ancient Inner Asia. It was Rudenko who led the 1947-49 excavations of Scythian (Yueh-chi) tombs at Pazyryk and later excavations of Hsing-nu barrows at Noin Ula. Not only was he the primary interpreter of these two significant "finds," but as M. W. Thompson (1970: xviii) points out in the preface to his translation of Frozen Tombs of Siberia (originally published in 1953),

When Rudenko started work on Pazyryk in 1947 he had had the inestimable advantage of a lifetime's first-hand experience of living nomads before turning to dead ones. . . [while] travelling in Siberia . . . largely on horseback, he had a lifetime's experience of horse-riding, an important matter when the subject of study is mounted herdsmen.

Years after publication in Russian, Thompson, in consultation with other British scholars in the field, acknowledged the significant impact exercised by Rudenko's theories on contemporary views of early Eurasian cultures and lifestyles, stating that

Rudenko has criticized some of the theories put forward as to the origins of this way of life [mounted pastoral nomadism], and as in many respects his own theory goes furthest to explain the known facts . . . He starts from the assumption that the widespread adoption of riding in Eurasia was not due to spontaneous discovery of how to ride. Riding was essentially for large-scale horse-breeding, and this was made profitable and worth while by an increasing demand for horses from the urbanized areas to the south . . . [Moreover] if the evidence from the latter end of the last millenium held good for its beginning [climatic downturn] then we can see that there was a very strong motive for abandoning the uphill struggle with agriculture and taking to the life of a mounted horse-bredner. . . Rudenko's explanation of the origins of this specialized form of pastoral life . . .
has the virtue of providing answers to two of its most puzzling aspects . . . [first, the extremely large] size of the herds . . . due partly to the value set upon it by the neighboring civilized areas. The second point is that, as this form of life in large measure owed its existence to the economic demands of the areas of higher civilization, there was a powerful reverse current of objects and influences from the civilized areas (1970:xxv-xxvi).

Therefore, as we investigate the following article by Rudenko and Gumilev, we can be reasonably confident in the soundness of their contentions as to the origins of nomadism and the east west split in ethnospheres coinciding with a primary landscape division.

The nominal subject of this article, P. K. Kozlov, was an explorer who led one of the first expeditions to excavate the most important site of Hsiung-nu (Hunnic) culture discovered to date. Located in the Noin-Ula Mountains on the Selenga River southeast of Lake Baikal, about two hundred miles east of Pazyryk and one hundred miles north of Ulan Bator, the site was discovered in the 1890's, but not properly excavated until Kozlov's 1924 visit. Even then, along with Rudenko's 1929 excavation of Pazyryk, exploration was limited in its method and technique as compared to Rudenko's work in the late 1940's on both sites. Irrespective of technique, the physical site is frozen from mid-August to mid-June when the last snow falls. Despite such fearsome environmental limitations, Kozlov also discovered the ruins of the Tangut capital at Kara Khoto near the Gashin Nor (saltlake), on the Edsin Gul (dry river bed) in the Alashan region of Ningxia. As somewhat of a predecessor, Kozlov's work has, in a sense, been used to provided a platform for a methodological project, as Gumilev (1966e:32) states that Kozlov did not view his work as a project in the humanities, but rather as a natural science, as evident from his writings in which the natural conditions . . . and the ethnotraphic characteristics . . . received equal attention. Kozlov did not formulate his attitude towards the methodology of research because there was no need for it in his day. But we should apply this approach if we want to emulate him in enriching science.
A concern for methodology underlies all Gumilev's work. There is, as his critics rightly claim (Drozdov, 1977), a philosophical methodology at the core of his thesis that ethnic development represents a process of natural history. The preceding passage on Kozlov's work points out how much Gumilev stresses the importance of an integrated method, as he further states that modern historical geography is not a humanitarian, but a natural science . . . [moreover] the most important service rendered by Kozlov [was] his use of historical-geographical synthesis, a research method that also bears fruit at the present time. Nothing better can be said about a scholar (1966e:32).

To even the casual reader of Gumilev, his stance in advocating a synthetic method must appear throughout his entire project. What pressures necessitated such an unrelenting insistence on this point which most contemporary geographers take for granted, as synthesis of data from the natural and social spheres of activity represent so much an integral part of the geographic tradition over the past three centuries, and certainly in the modern cultural stream, i.e., as represented by Man's Role (1956). One can only suspect a problem internal to a doctrinaire ideological system -- in this case, Soviet social determinism -- that drives Gumilev to take such a forceful stand.

Turning to the structure of the article, Rudenko and Gumilev's ostensible purpose is to discuss Kozlov's "great discoveries," suggesting several ways to do so. They reject the approach of "describing the thought processes that enabled the traveller" to find his goal in the desert, or the psychology underlying the discovery, as having "already been done by Kozlov himself." A second approach, "to describe his findings," has also been well covered. The authors define "the most interesting task: to try to show how these discoveries affected history and geography." Their stated intention is to graft a material, archeological branch on to a purely historical methodology in which texts, as in the case of the Huns, can
provide enough data to reconstruct the course of events ... in which the Huns tried to defend their freedom and distinctiveness in uneven struggles, but only the artifacts preserved in the ground make it possible to reconstruct the character of Hunnic culture and to determine its importance and level of development (1966:26).

The aim of their method, and by inference, of historical geography, is to reconstruct past cultural landscapes in as holistic a manner as is possible from the widest possible sources of data. They would also uncover a much more subtle layer of culture, the character of a people and the web of its importance in both the history of its time and its encompassing landscape, both of which are greatly influenced by the level of socio-technical development.

To discuss this more holistic aspect of the subject, (which may now be defined as reconstructing cultural landscapes), involves a second process, which is examined in relation to the Kara Khotō discovery, and establishes "the geographical situation of the city and the circumstances under which it perished." Again, we can generalize from this statement to define its aim as establishing the landscape characteristics and encompassing environmental conditions of a particular place during a given period. If viewed in the context of reconstructing the "character of a people" as its "ethnos," and "its geographical situation" as its landscape, we have semantically reconstructed the emblem of Gumilev's entire project. The authors, however, briefly describe the data then analyze it in order to answer several questions. For data, they use Kozlov's findings at both sites, supplemented by evidence from historical texts and physical anthropology. So as to more cogently discuss the two following questions, the authors briefly survey three periods of Russian historiography of Central Asia. Then, in order to support the synthetic approach, they attempt to situate Kozlov within one period and style of historical research, and discuss the limiting methods which have dominated the three periods.
The first question asked by Rudenko and Gumilev concerns the Noin Ula material and its interpretation. According to the authors (1966e:26), a major question raised in Soviet research over the artifacts from Noin Ula, concerns "the significance of Chinese culture in the Hunnic state, the depth of its influence over the nomads, and the way in which the Chinese artifacts reached the Huns." Two opposite points of view have arisen over this question. The first viewpoint holds that the problem of the Huns was primarily "a Chinese problem." That is, if the Huns borrowed their statecraft and much of their material culture from China, then the Hunnic state should be regarded as part of China's periphery." But, the second perspective, according to the authors, assumes that the Huns had a separate culture, independent of Chinese influences; that its advanced form of social organization was a result of the conservation of a developed tribal system, and that the Chinese goods were either booty or 'gifts' of the Chinese court, i.e., camouflaged tribute . . . [and they] were culturally close to the peoples of southern Siberia and western Central Asia (1966e:26).

The degree to which the two points of view conflict stems as much from ideological considerations as from the Noin Ula evidence, which Phillips (1965:114) finds is "surpassed only in south Russia and the Altai," in providing material evidence of Hunnic culture, since "archeology has not traced the Hsiung-nu." The ideological perspective, that the "Huns as a Chinese problem," arises from the social determinist framework that assigns fixed stages in historical development, and therefore the Hunnic state can only fits into the model as an extension of the "Chinese slave-holding formation." Scholars studying the Huns outside of that framework have generally assumed the Huns' independence, so this problem has not arisen.

Gumilev and Rudenko, after assessing the data, conclude that the Hunnic culture represents, "together with the Scythian-Sarmatian and South Siberian cultures, a separate variant of human culture," independent from any
Chinese origins. They arrived at this conclusion by an analysis of the Noin Ula artifacts in terms of comparing material culture and its interpretation. This analysis compared the physical features and styles of adornment represented in these artifacts on the basis of which aspects of the material culture were derived from China and which from the West. Analysing clothing from this site dated 13 A.D., the authors found that Chinese silks were mainly ceremonial, while "the ruler's tomb also contained the ordinary wear of nomads, leather trousers and fur hats." This evidence correlates to a statement from a 2nd cent. B.C. Chinese source, (cited in Bernshtam, 1950:57), that, "in running through thorny plants, [Chinese silk and cotton] garments are no match for the durability of woolen and leather clothing." The authors (1966e:26) conclude that, "over a period of 200 years, Hunnic clothing . . . successfully competed with Chinese garments."

A second assumption, that art objects might possibly reflect influences from the "more refined Han civilization," and "objects of daily use," might not reflect such influences, was found to be reversed. That is, the influences predominating in art objects reflected a Hunnic variation of the past millennium steppe aesthetic, i.e., the Scythian "animal style" in which carnivores are depicted winning over herbivores with which they are locked in combat. The authors interpret symbolically suggesting "that the animal art style had its origins among hunters and stockherders since militant nomadic tribes generally use carnivores as totems," and authorities generally recognize that the animal style sometimes used in Han art, without a doubt, "represents borrowing from the nomads." The authors conclude, "Hunnic art had a greater influence on Chinese art than Chinese on Hunnic" (1966e:27).

Taking up the problem of everyday objects, the authors found that they too "were undoubtably made by local artisans," and that only certain
ornaments, i.e., bronze umbrella tips and lacquer cups, showed "the Chinese hand." They also argue that rather than representing exclusive trade with China, these objects could have either been made by, or brought by Chinese immigrants, a factor which will be discussed later. The authors next turn to needlework, on which are represented portraits that do not show any "pronounced Mongoloid characteristics." Using the criteria of physiognomy, they analyse the facial features and speculate that these portraits are of Huns, and not of Greco-Bactrian origin. Their evidence for this conclusion is drawn from two sources: first, another Chinese source (cited by Bichurin, 1842) states that when a Chinese, Shih Min, seized power in 350 A.D., "he ordered the killing of all Huns . . . and many Chinese with prominent noses were among the victims," while Chinese art also depicted the Huns with "particularly large noses." Furthermore, cranio-logical analysis (Debets, 1948:121) has determined that Huns were a "Paleo-Asiatic type . . . with a nose that was neither flat nor highly prominent." In my own research on China, I have found references in several historic periods, especially at the beginning of the Ming (Rossabi, 1979), where "long noses" of any ethnic stock, were attacked by revengeful Han, until stopped by authorities.

Moving on to cultural adornment and hair styles, an important feature of archeological interpretation, (c.f. Loroi-Gouran, 1966), the authors find it to be "a reliable ethnographic indicator in eastern Central Asia, [representing], a sign of loyalty to the rulers," and give several historical examples. As the needlework portraits depicted hairstyles that were Hunnic, it can only be assumed "that the portrait thus depicts a Hun." Finally, "the portraits are not [crafted] in the Chinese manner," and might have been done by a "West-Central Asian or Scythian artist . . . who lived among the Huns." Therefore, Gumilev and Rudenko conclude from their interpretation of physiognomy and style
represented in the artistic and corroborative data, that the Huns were a separate people "not of Chinese origin." Moreover, the authors again display the value of the synthetic method, in an overall conclusion that distinguishes three spheres in Hunnic culture: the local, the Scythina-Sarmatian, and the Chinese. The base objects were of local origin, thus indicating the stability of nomadic culture. Chinese craftsmen were responsible for small articles and ornaments, and art objects related to ideology carry the undoubted traces of Scythian, Sarmatian, and South Siberian, i.e., Ting-ling, cultures (1966e:28-29).

Regarding the ethnography of the Hunnic state, Rudenko and Gumilev demonstrate how archeological and textual sources can be interwoven "to reconstruct the character of Hunnic culture. One important aspect which was less emphasized is that the Huns ruled a partly agrarian state within the Han sphere of general influence. But the authors do acknowledge the heteroethnic character of that state, or nomadic ruled empire, and the importance of Chinese emigres. Using historical sources translated by Bichurin (1829, 1842, 1950), they present the argument that some Chinese escaped from behind the wall, its corvee, taxes and corruption, to join the Huns. They concur with the generally recognized view that the walls were built, "not so much for military as for police purposes," and more to keep Chinese subjects in than to keep nomads out. This point becomes important in assessing later ethnogeneses of frontier peoples, especially the Sino-Muslim Hui, setting a precedent during the Hunnic era for Chinese fleeing towards frontier cultural zones and subsequent service to steppic ethnoses; a process well documented as continuing on into the Qing dynasty. The possibility of correlating this Chinese-steppe frontier to a general model of frontier history has been neglected by most historical geographers other than Lattimore (1949), especially given the explanatory potential of F. J. Turner's (1894) thesis, which Wieczynski (1976), for example, has shown to be more effective in interpreting some aspects of the Russian-Steppe-
Siberian frontiers than of the American frontier. This heteroethnic and ecologically diverse zone between mountain, desert, steppe, oasis, and loess plateaus, probably represents the most important region in Chinese history as a contact point between eastern steppe and Han agrarian state. Its population was mainly composed of elements considered by Chinese as potential defectors. Reports from 33 B.C. enumerate this population (Ho Ying in Bichurin, 1950:96, cited by Gumilev and Rudenko, 1966e:27) as several categories of Chinese subjects who dreamt of fleeing to the Huns. They included Tibetans . . . mobilized for border-guard duty and from whom Chinese . . . seized livestock, property, women and children; relatives of warriors who were prisoners of the Huns and had not been ransomed; slaves of frontier residents; and criminals in hiding. . . . history records many such immigrants.

Gumilev and Rudenko find that craftsmen, as well as soldiers and clerks were most probably among those who fled to the Huns, accounting for much of the personnel necessary for a state enterprise. This raises an important point here, as we know from general references that these immigrants did not mix with the Huns. Only people born of Hunnic parents could become Huns. And outsiders, though they did not live badly, found themselves in the position of the ancient metic, or alien resident of ancient Greek cities who had some civil privileges, and married among themselves. Later they intermixed, multiplied, and even created their own state, which . . . existed only briefly, from 318 to 350 A.D. (1966e:27).

The basis for a separate population which was continually replenished with refugees from both steppe and agrarian Han cultures and economies, makes this a fertile area for both revolt and innovation, analogous to the ecological space where fresh and saltwater meet. This conclusion has a direct bearing on the direction of cultural transmission and ethnogetic flow. For example, that the Huns, and later the Mongols, accepted outsiders within their sphere, their economy and their court, but not within their ethnos, maintaining a relative endogamy except for treaty marriage-alliances shows how the frontier maintains
a permanent reservoir of an unstable population that could shift its allegiance either towards steppe or China. With the arrival of a post-Mongol Islamic superethnos extending far into China, this population now had an alternative support base for recognition and identity independent from either nomadic or Chinese authority. Further developments in steppe history must be concerned with this fact, which Gumilev implicitly raised here. But nowhere else in the series does he develop the implications of this hetero-ethnic population reservoir at either the western or eastern margins of the steppe.

An important aspect of Kozlov's Kara Khoito discoveries, addressed by Rudenko and Gumilev's analysis of the data, disproves earlier "loose historical interpretations" suggesting the city's destruction by Mongol forces. They also found that the geographical situation of this little-known, 13th to 14th century Tangut kingdom contradicts the present physical environment in which its ruins are found, as historical records (Grumm-Grzhimaylo, 1933) show it had a large army of 150,000 horsemen, a university, an academy, a school, a legal system, and even a trade deficit . . . covered in part by gold sands from Tibetan holdings, but mainly by the surrender of livestock, which constituted the principal resource of the Tangut state (1966:29).

In comparing this evidence to present arid conditions, Rudenko and Gumilev find that the archeological data combined with historical evidence allows for a reconstruction of the Tangut landscape as well as its ethnic character. The archaeological site represents an extensive city and suburbs, which would have been on a river that has since dried up and shifted its course into two channels, one into the salt lake Gushin Nor and the other into Soko Nor, a fresh water lake. Therefore, given an greater amount of moisture in that period, a sufficient amount of fresh water would have been available to support such a large city. Furthermore, although the city was actually taken by Genghiz Khan in 1226, documents unearthed in the archeological excavations indicated that it
continued to exist into the 14th century. The authors, following Kozlov's (1948) descriptions, found that

the abandonment of the city was later associated with a change in the course of the river, which according to Torqut tradition, was diverted by besiegers by means of a dam of earth-filled sacks. The dam has been preserved in the form of a bank of earth . . . but the Mongols were not involved [as] descriptions of the seizure of the city . . . by the Mongols contain no information on such a dam . . . [nor could they have it, as] their horsemen did not carry the necessary sapper's equipment (1966e:30).

Here the authors conclude that the Mongols were blamed for the destruction of the city more because "it was customary in the Middle Ages to ascribe all bad things to them," rather than to any concrete evidence. In fact they conclude from Kozlov's (1948) findings, that

the Fanqut city actually perished in 1372. It was seized by Chinese forces of the Ming dynasty, who were then waging war against the last successors of Genghiz Khan, and destroyed it as a Mongol strongpoint that was threatening China from the West (1966e:30).

Addressing the question of why the city did not revive, the authors again turn to Kozlov's findings, which were as geographic as they were historical. Kozlov noted that the flow of the Edsin Gol had been declining and the Sokgo Nur silting up and interpreted this westward shift of the channel as marking the end of the city. But from this observation the authors conversely find that the channel's shift could not alone explain both the silting-up and demise of this large, populous oasis. They concluded therefore, that its causes involve

the problem of fluctuation in the moisture supply of Asia during historical times . . . [which] is a large question that must be investigated separately, but Kozlov's discovery may serve as the starting point for such a research project, which is already engaging the attention of many geographers and serves as the subject of a constructive argument (1966e:30).

As Gumilev has already begun such a project of investigating the large scale climate fluctuations in concert with Eurasian inland water levels, his final
statement here seems parenthetical or self-referential. Moreover, this focus is reinforced by their following statement that

the main point, is not the fate of the Idzin-Ay fortress or the westward shift of the Edsin Gol channel, but the larger question of using archeological findings to reconstruct the physical-geographic conditions of past eras. This approach can be used to uncover the laws of nature that cannot be detected by other means (1966:30).

Here we uncover the authors' basic use of Kozlov's work as a palimpsest to explain a methodology that brings a natural history of human settlement up to date, or as they put it: "This is historical geography from a new point of view, from the point of view of 20th century science."

In order to provide a framework which situates both Kozlov and the authors' scientific method of historical geography, Rudenko and Gumilev next present a historiographic outline of Central Asian studies in Russia. Discussing the "significance of Kozlov's contribution to research regarding Inner Asia," they propose that these studies have "gone through three stages:" (1) the Bichurin-sinological, (2) the Przheval'skiy-explorer, and (3) the Bartol'd-philological. The first period of Inner Asian scholarship is called by the authors "the Bichurin" stage, as represented by the scholar Bichurin (the monk Iakinf) who translated "a whole library of . . . Chinese classic literature on history and geography [and] Chinese writings about Central Asia. Once in Russian, this literature provided the basis for interpretive research which "was the pinnacle of 19th century science." That generation of scholars, i.e., V. V. Grigor'yev, N. A. Aristov, K. A. Inostrantsev, and G. Ye. Grumm-Grzhimaylo, "were not sinologists, but used their special knowledge to fill in the historical picture provided by medieval chroniclers and geographers."

The second stage developed during the late 19th century and is best represented by the reports of literate travellers. The authors call this
a major step forward [which] was achieved by N. M. Przeval'skiy and his pupils... [who] visited scenes of great events and verified available information, some of which were confirmed and some rejected. Geography thus injected the warm blood of life experience into the veins of history. Russian science advanced to the forefront of world research (1966e:31).

The third stage, however, is more problematic despite its noteworthy beginnings with the renowned philologist V. V. Barthold (1899). In their opinion, Barthold's philological approach created a continuing problem for science by holding that,

synthetic generalization must be preceded by particular research on a number of detailed questions relating to texts, linguistic characteristics, etc... [but] details piled one on top of the other without system would obscure the whole. This led, inevitably, to a breakdown of the entire field of study along linguistic lines, and the history of the Turks, the Mongols, and the Manchus was separated into three disciplines that were virtually impossible to coordinate. Furthermore, the requirement that the historian read the sources in the original makes it impossible to compare various groups of data even if they are related to a single topic (1966e:31).

The authors conclude that while later in his career Barthold did not hold to these linguistically determined divisions in research, the results had permeated academia and essentially broke down the unity of the region: "as a result this approach did not yield a single work of generalization, for which the need nowadays is especially great." In response, however, the authors view a fourth stage, recommending the use of translations, since no one could be both such a formidable linguist and also an expert in history and geography. Here Rudenko and Gumilev take on the proponents of a linguistic approach to ethnicity, (i.e., Arutiunian in the USSR and Fishman in the USA, who define ethnos primarily by the criteria of language), arguing,

when we speak of the study of peoples, their life, culture, migration, origins, and disappearance, all the things we call ethnogenesis... these problems cannot be solved by linguistics. What is needed here is a synthesis of history and geography. In other words, historical geography, not in the old meaning of that term, but in a new sense, based on the latest findings of the natural sciences. This approach requires a new point of view (1966e:31).
Returning to the theme of landscape and ethnos, Rudenko and Gumilev continue to call for a new point of view towards historical geography. Here they correlate concept "ethnosphere" to a phenomenological existence of ethnoses as a universal, but discontinuous, distributional surface within the biosphere.

In regard to the classificatory framework, they state (1966e:31-32) that the basic element of any systematic geographic investigation is the landscape. A people that has adapted itself to a particular landscape is linked to it by its economy, the extraction of the means of daily existence, and even by its historical fate. In that sense an ethnic community [ethnos] is a part of the natural environment. The sum of the ethnoses is the ethnosphere, which like Vernadskiy's biosphere, covers all land areas and constitutes a component of physical geography, but with its own particular laws. The relationship between the ethnosphere and nature can be traced in the ethnoqeny and migrations of peoples, but certainly not in the development of society along a spiral [in a succession of social formations] or in the logic of events and the actions of individual political figures.

The authors, however, warn against mixing social and natural causes, pointing out that "any attempt to link these groups of phenomena [as above] with geography would be a fruitless approach." Rather, they see a mediating factor between the social and natural forces at work, or in their words,

The relationship between physical geography and history is thus effected through ethnography or, if the particular ethnic community has disappeared, through archeology (1966e:32).

Rudenko and Gumilev conclude, therefore, that in using a historical-geographic synthesis, Kozlov's methodological contribution exceeded that of the mere data of his archeological discoveries. They further suggest, that

in such an approach, it is clear that modern historical geography is not a humanitarian, but a natural science. [and] That is how Kozlov's viewed it, as is evident from his writings, in which the natural conditions of Asia and the ethnographic characteristics of Mongols, Torguts, or Tibetans received equal attention (1966e:33).

Referring to current practices of academic specialization and fragmentation, these two scholars find it is necessary to formulate a methodological stance which was not necessary for Kozlov, "because there was no need for
it in his day." We can, therefore, view this work as a seminal presentation of the methodological paradigm -- "Landscape and ethnos." But after having qualified, in the present discussion, the limits of a philological and text-based approach to historical geography, Gumilev demonstrates, albeit three years later, how to integrate an analysis and interpretation of historical texts into his method. However, before discussing this eighth article in the Landscape and Ethnos series and its method of semiotically analysing ancient Tibetan cartographic materials, one other "outside" article demands a brief overview. Another joint paper, this article by Gayel' and Gumilev (1966) reports on their field research in a small area on the Don River floodplain. Here Gumilev teams up with a soils specialist to analyse the layered paleogeographic evidence for the impact of human agency on the vegetation and topsoil, and the coincidence or certain climatic regimes.

Soils of Various Ages in the Steppe Sands of the Don and the Migration of Peoples in Historical Times

In 1966, Gayel' and Gumilev published their findings from field work conducted in 1964 on the middle Don riverbank terraces near the settlements of Molochnyy and Vyvyezdinskiy. The primary data for their research was found in soil layers buried in sandy areas, a technique of historical landscape interpretation used in Khakassia (Orlovskiy and Pol'skiy, 1964) and in the Tisza-Danube interfluve in Hungary (Gayel' and Trushkovskiy, 1962). The authors attribute the original discovery of this phenomenon to Grumm-Grzhimaylo (1933), who associated these unique soil profiles with "the distribution and migration of steppe tribes over the last 2500 to 3000 years." The important aspect of these soil layers is that their depth, location, layer in the profile and composition reflect cycles of deflation, or exhaustion and erosion. However, subsequent theoretical developments (Gayel' and Trushkovskiy, 1962; Gayel' and
Smirnova, 1965) have established the following phases of deflation and sequential stages in the formation of soils in sands of the steppe zone:

1. The ancient aphytogenic phase of deflation. This occurred the last time at the end of the Pleistocene and the beginning of the Holocene (15,000 to 12,000 years ago) under the harsh conditions of a dry and cold climate, almost without the participation of vegetation.

2. The ancient primitive agricultural phase of deflation. It occurred rarely in the Neolithic Age and was more common in the Bronze Age (8000 to 3000 years ago) as a result of increasing human activity of man, at first as a hunter and fisherman, later as a primitive agriculturalist, who had domestic livestock. In Khakassakia, soils of this deflation phase contained agricultural implements such as hoes and quernstones, as well as pine and larch charcoal (Pol'skiy, 1962).

3. The early grazing stage of deflation. This was widespread in the late Holocene (3000 to 500 years ago), when the climate became more arid... leading to abandoning of steppe agricultural life, while retaining agriculture on river terraces. Waves of nomads moved through the Eurasian steppe from the Ordos and Alashan to the Danube. As a result of repeated and excessive grazing and trampling by livestock, the ancient thick chernozem-like loamy soils either were completely destroyed over a large area or have been more or less preserved in a buried condition... the ancient eolian landscape has been preserved only in areas that were far from watering places and unsuitable for grazing or tillage. Having destroyed the sandy grazing lands, the nomads moved on, the sands became overgrown, and the eolian sediments gave rise to new soils... there may be more than one... humus horizons... reflecting alternating periods of intensive grazing and regrowth. The formation of each... required 300 to 400 years. Everywhere, from the Dnieper to the Yenisey, these recent thin soils contain pottery and tools of nomads and agriculturalists of the end of, the Bronze and the Iron Age.

4. The present grazing and agricultural phase of deflation, which developed especially since the 19th century (in the last 150 to 100 years). It is related not only to the grazing of domestic animals, which greatly increased in numbers in the second half of the 19th century, but to almost continuous plowing of the chernozem-like sandy loams that developed on the ancient lacustrine alluvial plains of river terraces... [and] were not greatly affected during previous anthropogenic phases of deflation by selective cultivation and even less by grazing. Even these soils, however, could not withstand continuous cultivation, followed by the heavy pasturage of the 19th and early 20th centuries. In magnitude, this deflation exceeded all others (1966:576-77).

What, then, can we infer about historical ethno-landscapes from these stages of buried soils and their contents of both human and physical indicators? First,
the depth of the remnant layer indicates its relative age and sequences of soil building. Second, vegetational matter indicates the biotic conditions. Third, animal remains can indicate relative populations and species. Fourth, human artifacts can be dated and related to ethno-cultural ensembles and given landscape conditions. The authors were able to reconstruct the landscapes during each of these phases, and citing Konstantinov, 1964), they also found that because of those natural conditions, the sandy areas of river valleys in the steppe zone have apparently long attracted a population of cultivators and stock herders. This population differed from the nomad herders of the clay loam watershed, who seemed to have been an integral part of the steppe biocenosis. The nomads simply used up the available grass and energy of the steppe, without attempting to raise food crops or animal fodder. This tended to limit population growth . . . established a more or less stable functional relationship between the potentialities of the environment and the economy of the ancient nomads. Any change in this potential depended mainly on the changes in climatic moisture supply (1966:581-82).

They also establish that more intensive land use combining settled and semi-settled stock raising and primitive tillage meant that the ability to grow fodder crops for livestock led to increased herds, but intensive pasturage in restricted areas around permanent watering places inevitably destroyed the turf cover and the loamy sands, especially when temporary aridity of climate was a contributing factor (1966:582).

In this conclusion, the authors establish a historical baseline for contemporary mechanisms of desertification as the same processes have been noted in most studies of the problem, (Baqi, 1980). A second set of information, derived from the vegetational remains in these soils, correlates to both the social and climatic history of the region surrounding the study area. They were able to identify "the so-called loo-frame culture of the Bronze Age (middle of the 2nd millenium B. C.)," based on hoe cultivation and stock-raising economy, herd composition being judged from bone remains, i.e., "53 % cattle,
30% sheep as well as horses, goats and hogs. The latter were never raised by
nomads." Citing Artamonov (1950), the authors state that this log-frame cul-
ture was known to have "existed into the 1st millennium B.C., with the Scythians
regarded as [their] descendants." But historical sources show that by the 2nd
century the Scythian tribe of Perierbid occupying the study area

apparently had already destroyed the light steppe soils, especially
in view of the fact that the climate of the arid zone was passing
through a period of dessication in the 1st to 4th centuries. .
[while] new herding tribes penetrated into the steppe (1966:582).

The authors now rely on Gumilev's climatic chronology (figure 7) to establish
periods of aridity and moisture, and which have been examined earlier.

Further evidence of human occupation found in the soils, indicated
that a "succession of archeological cultures in this situation suggests a
change in the tribal composition of the population." Again turning to histori-
cal records, the Scythian, Sarmatian and Alan tribal cultures are identified
and their locations and ways of life correlated to archaeological data. Gayel'
and Gumilev now set out a historical geography of the steppe from the perspec-
tive of soil quality and deflation caused by joint environmental and human
agency. For example, during the Alanic hegemony (1st to 4th century A.D.),
Alan control over large-scale production of grain on the steppes and its export
to Rome "was so significant that Emperor Constantine found it useful to move
his capital to Byzantium [330 A.D.] through which the grain trade passed."
Succeeded by the Huns, with their more effective calvery tactics, the Alans
disappeared from the Don steppes, some moving upstream and farther north,
others into the Caucasus and some elements migrating as far west as Spain.
During this time, however, the authors contend that all of Eurasia was suffer-
ing a period of desiccation. Conflicts between Inner Asian nomads over pastu-
rage put pressure on the Sarmatians, as the arid zone's desiccation
coincided with the arrival of the Sarmatians (Alans) and their large herds on the middle Don, and probably increased wind erosion of soil on the sandy grazing lands. The degradation of the grazing lands and the deflation of the sands of the Don temporarily retarded the economic growth of the Alans, affecting their subsequent history (1966:584).

Identifying the next phase of moisture (5th to 9th centuries) with the Khazar stage of ethno-cultural hegemony over the Don steppe, the authors found that while soil conditions were adequate to rebuild the local economy, its population had lost the "political initiative." Apparently this local population of settled agrarian stock rearers were now of the Saltovo culture (Lyapushkin, 1958; Artamonov, 1958). But, while their environment had become ecologically favorable,

the sandy terraces of the steppe streams were highly suitable for the growing of crops, while the clay loam steppe on the watersheds accommodated nomad herders, first the Bulgars, later the Hungarians (after 822) and the Petcheneqs (after 889). [However] the nomads blockaded the Saltovo people in the Don valley, inflicting repeated defeats upon them... but the floodplain forest and the many woods on the sandy river terraces saved [them]. Here, the authors find a repetition of the events in the 3rd century, when the Huns performed the role of the Hungarians and the Petcheneqs (1966:584).

Might we not view this continuing saga, spelled out by the buried soils, as an argument for cycles of sequent occupancy? In this approach, Gayel' and Gumilev present the situation of the Saltovo culture as another cycle in the process whereby settled or semi-nomadic, mixed agrarian-stock raising peoples, i.e., the Alans and "log-frame" cultures, overextend the carrying capacity and fertility of their landscape. Then, during periods of desiccation they were also faced with an additional challenge both from the environment and from nomads who were likewise responding to the increased aridity and decreased bioenergetic potential of their landscapes. We will see this cyclical pattern repeated over again until the modern period. The second aspect of this approach, sequent occupation, makes sense in its biological connotation if we follow Gumilev's assumption that (1) human ethnic communities are natural
elements within their encompassing landscapes, and that (2) those communities have a natural life cycle. A new ethnos and human landscape can, therefore, arise within the same geographical territory after the demise of a previous ethnic ensemble; an argument followed through the changing ethnoses occupying the particular Don river site of this study.

At this juncture, the authors point out that, "it is no accident that the old ethnic boundaries coincided with the boundaries of the natural landscape." They note that this phenomenon has been observed in many other instances, particularly in Gumilev's (1966a, 1966b) study of the Volga and Terek river sites. In fact, they propose that it "may be used in an ethnographic classification of ancient cultures," to indicate different ethno-landscape formations. On this basis, they assert that

nomadic herding was not the principal factor in landscape change in the Don valley. The local population, too, was not capable of accumulating livestock during this period [arid interlude] in such large numbers as would have been required to destroy the turf cover over such a large area and thus "bare the sands" (1966:584).

Within this assertion, however, they are able to make the following conclusion which plays a key role in a more general model explaining landscape change or different forms of ethnogenesis as sequent occupancy, hence,

Therein lies the basic difference between the Saltovo people and the Sarmatians; the latter appeared in the Don country with a complete way of life, adapted to slightly different natural conditions, and therefore were able to affect the landscape. The Saltovo culture, on the other hand, arose in the Don valley itself and became an integral part of the biocenosis, which insured the relative stability of the culture (1966:584-85).

This principle of difference becomes a crucial part of Gumilev's later argument over typologies of ethnos. In this case, the Saltovo, as well as their direct predecessors and descendants, are viewed as static in their ethnogenic process, having entered into a more passive coevolution with their encompassing landscape. Conversely, the Sarmatians, or other semi-nomadic immigrants, are
deemed to possess a more dynamic ethnogetic quality, in which they more actively enter into a coevolutionary adaptation of their encompassing landscape.

The authors continue the study on "into the era of Russian history," turning their attention to the demise of Khazar hegemony. Here, the Russians, in particular the Severyan tribe, begin to progressively engage steppe nomads and semi-nomads, defeating the Petcheneqs and eventually the Khazars, gradually taking over the former Saltovo landscape. The Severyan economy and way of life, however, differed from that of the Saltovo, being "more concerned with hunting, fishing, and poultry raising (Artamonov, 1958)." But, as Gumilev contends that the basis for ethnogenesis usually lies in an initial mixture of peoples, he finds (1966:585) that according to Vernadsky's (1951) account,

By the 11th century, the Russians had merged with the local people, which consisted of former Christian subjects of the Khazars. The common religion enabled the Saltovo people, Khazars, and Russians to form a single Russian-speaking tribe, known as the Brodniki.

An ethnogenic condition is found to occur whereby the Brodniki arise out of, and consolidate, the remnants of former ethnoses through a common way of life involving an ideological system of signification and practice (religion) integrated with a particular landscape adaptation and economy. But in another cycle of the steppe, this new ethno-landscape of the Brodniki is invaded by another nomadic ethos, the Kipchaks (Polovtsians). Again, the floodplain forest shelters the Brodniki "hearth" from the full brunt of nomadic attack, enabling them to continue as an ethnos and, in fact, to ally with another nomadic wave, the Mongols, to defeat the Kipchaks. Thereafter,

the Brodniki were loyal subjects of the Golden Horde and no one challenged their control of the Don valley. Starting in the 14th century, the Brodniki assumed the Turkic name of Cossack... [whose] ranks were swelled in the 16th century by fugitive serfs from Moscovite Russia and the difference between indigenous Cossacks and newcomers was noticeable until the end of the 17th cent (1966:585).
Within this Don river valley landscape, the potential for a way of life and economy involving mixed agriculture along with stock-raising again emerged, as fugitive Russian serfs brought with them their customary occupations, agriculture and settled stock-raising. And since the 16th century again experienced the same climatic fluctuations as the 3rd century, with simultaneous desiccation of both the humid and arid zones (Gumilev, 1964), the consequences were similar in both cases: a new phase of deflation began, leaving its traces in the destruction and burial of the thick ancient soils and in the formations of several horizons of thinner, more recent soils (1966:585).

But this latest chapter involves a new factor in the social dimension of a progressive technosphere. First, there were no more nomadic "hearth" left to natural conditions and able to evolve sweeping migratory responses, invading the civilized peripheries. The last Dzungarian Mongol confederation was destroyed by the Manchu armies after conquering China to found the Ch'ing dynasty. Second, the military, civil and technical organization of the sedentary state formations had evolved to the point of exceeding any comparable potential or advantage which the nomads might have had for sustained conquest. Gayel' and Gumilev recount the last tale in this saga of steppe landscape and ethnoses written on the buried layers of loam which display a transition from the interval of "the Dikoye Pôle or wild field, of the 17th century," as the development of commercial capitalist agriculture began in the steppes of the Volga and the Don, leading in the second half of the 19th century to extremely rapacious exploitation of the sandy pastures and continuous plowing of the sandy loams. This gave rise to the latest grazing and agricultural phase of deflation (1966:586).

In conclusion, the authors find that analysis of historical events and the periodic increases of aridity and deflation phases has thus shown that the greatest overgrazing of sandy pasture lands and wind erosion apparently took place at the time of the log-frame culture (2nd millennium B.C.), in the Sarmatian era (the Alans of the 3rd century A.D.), the rule of Ivan the Terrible (16th century) and, finally, the capitalist era (19th century) (1966:586).

Therefore, they conclude from these historical-geographical findings, that
climatic and anthropogenic factors of landscape formation may sometimes operate jointly, as in the 3rd and 16th centuries, when both tended to promote deflation, and sometimes cancel each other out, as in periods of increasing moisture, when eroded sands may again become overgrown even in the presence of a grazing economy (1966:586).

This preceding article represents the last phase of Gumilev's field oriented physical geography. It also marks a turning point in his writing, moving more towards a theoretical orientation in discussing both the synthetic method as a sine qua non for historical geography and ethnology, and the bi-social dimensions of ethnos and ethnoogenesis. While many of these issues presented here and in the preceding chapters, and references to the field work, will reappear throughout his subsequent writings, they have laid an important foundation for further speculations. Moreover, as these succeeding chapters turn over each new layer of Gumilev's project, their firm foundation in the empirical field research of physical geography and archeology will shore up some of the weaker theoretical extensions. Only one more important part of the foundation remains -- the historical text as data source. Having covered archeology and physical geography, the question of how to use textual and other symbolic, yet material, systems of signifiers, i.e., maps, visual art, etc., remains to be discussed. In the concluding section of this chapter, which also ends this first part of the thesis, the focus on primary methodology and the material basis of Gumilev's landscape and ethnos project would be incomplete without addressing the problems of text, so necessary to our synthesis. Here we present the eight articles in this series, specifically to address that issue within the context of our discussion of primary sources and methods.

Another joint paper, this methodological exposition involves empirical data in the form of both literature and cartographic materials. Gumilev has already presented, from a number of different perspectives, interlocking arguments in favor of a synthetic method: first, from his own work on
fluctuations in inland water levels and Khazaria; second, in relation to climatic fluctuations as the basis for a chronological table of environmental and ethnogenic sequences; third, reinterpreting archeological and orientalist research in collaboration with archeologist-anthropologist Rudenko; fourth, an analysis of landscape and ethno history in one particular riverine site through an analysis of its soil layers in collaboration Gayel', a soil scientist. Gumilev now joins a noted Oriental philologist to use ancient Tibetan texts as a platform for discussing the same methodological paradigm. This seems a logical parallel, and in fact, most of Gumilev's joint articles are co-authored with a specialist in the particular aspect of the subject being treated. While having eschewed a purely linguistic approach to ethnology Gumilev now displays his recognition of the importance that such philological and linguistics work can have when integrated into a synthetic method.

On Methods of Textual Criticism: Ancient Tibetan Cartography

After Rudenko and Gumilev's criticism of the philological approach as a limited method, it may seem incongruous for the eighth part in this Landscape and Ethnos series to treat a philological subject. But the purpose in this co-authorship by Gumilev and B.I. Kuznetsov, a Tibetan philologist, is to demonstrate the value of an integrated method, inclusive of philological techniques, in interpreting ancient texts and symbolic cartography. Their method, however, seems quite naïve in terms of the advanced level of textual criticism found in Russia as early as the 1920's with V. Propp's (1928) work on folklore, the "Formalist" movement (Medvedev and Baktian, 1928; Volosinov, 1929; Tomashevsky, 1923), succeeding semiotic methods (Mukarovsky, 1936; R. Jacobson, 1962), and structuralist systems of textual analysis, (Jacobson and Tynyanov, 1929; cf. Erlich, 1955; Bennett, 1979). In fact, what seems an attempt to reflect
"reality" in such an obviously symbolic and semiotic system of text and cartography as the Tibetan data, draws Gumilev and Kuznetsov into a staid "Zhando-vite social realism," the very orthodoxy which smothered Akhmatova's and Nikolai Gumilev's work. This weakness is not, however, inconsistent with Gumilev's positivist tendencies; most probably unavoidable in Soviet intellectual life during the 1960's.

Here we find Gumilev has reached the acceptable limits of methodological deviation from a "social-determinist realism," and having to conform on one front in order to break new ground on the ecological front. The authors analyse the data for clues to elucidate what they assume were actual geographical conditions, and therefore clarify the state of geographic knowledge held by a particular people located in space and time. This type of historical geography would seem to represent what Gumilev (1966:28) criticized in Yatsunskiy's (1941:21; 1955:3) subordinating geography to history through its task of studying and describing "the geographic aspects of historic processes," or merely providing "a description of geographical concepts held by people in the past." From this perspective Gumilev, following Yatsunskiy's later theoretical shift, would seem to reject any role for either historical perception or that of the present "lenses" through which the researcher attempts to reconstruct a past reality of set of geographic perceptions. Closing off historical geographic reconstruction to either a reflexive or retrospective perceptual treatment restricts his research method to a naive realism in both hermeneutical and contextual analysis of literary or artistic sources. In this case, the Tibetan cartography is an "artistic" resource, symbolizing more than either a material universe or purely-representational model of places and peoples. Therefore, while not explicitly stepping beyond the realist line, Gumilev does, however,
acknowledge the inherent necessity of recognizing both these problems of native perception and symbolic, or cosmological "meaning."

In analysing two dissimilar traditions in ancient Tibetan cartography, Gumilev finds that both the Iranian and Indic traditions differ cosmographically but demonstrate a convergence of regional cultures. In reconstructing the past from an ethnographic perspective, Gumilev recognizes the need of a "highly critical approach," in that "historical geography by its very nature is forced to rely not so much on observation as on information contained in the writings of ancient authors." Without referring to any recognized school of "approach" or method, he focuses on the problem of complexity in semantic and semiotic systems that vary greatly from our own through the distantiation of time as well as by cultural and linguistic factors. Because of this problem he raises the question of how "to separate erroneous ideas of past periods from full-fledged information. This follows from the realist position which also holds that

the scientific ideas of various ancient peoples coincide to the extent that the ideas are true, but the system by which these ideas are rendered may differ widely. . . . [and] derives from the differences in time and character of ethnic development. [as] Each cultural tradition has its own nuances in terminology and its own system of associations (1970a:565).

This passage represents the only extent to which the authors have provided any theoretical discussion around methodological issues of text analysis or interpretaton, simply concluding that, "literal translations of ancient scientific treatises tend to confuse modern scholars who do not make allowances for the mode of expression current in a particular period."

We can now see that the authors' do not intend to explicate a method or theory of textual criticism appropriate to historical geography, from whatever school it might be derived. Rather, they want to demonstrate how such
empirical data can be used through a process of "realist" interpretation to either corroborate archaeological, climatic, paleogeographic and historical data, or conversely, to point out some condition which can be explored through these other modes of data, or alternatively, to exemplify some particular historical-geographic situation. Again synthesis and generalization remains the crux of Gumilev's method as, conversely, data from these other sources aids in interpreting historical texts or maps. We find an implicit method here and throughout Gumilev's project. Emerging explicitly to the surface at times, is essentially a "systems" oriented realist position that is deeply empirical and positivist while holding to a dialectical and historical materialism. This empirical thrust allows for a wide latitude of interpretive flexibility as Gumilev constantly seeks to generalize aggregates of facts into broader concepts. In fact, he not only generalizes about natural and historical processes, but also about the theoretical principles drawn from natural science. Needless to say, a certain over-generalized treatment of various data and theory opens up his broad theoretical statements and synthesis to, at times, justifiable criticism.

In regard to the material at hand, we must assume that Kuznetsov's reputation as a Tibetan philologist would balance Gumilev's tendency to both overly generalize and push the limits of speculative interpretation. The first supposition which the authors put forward agrees with a growing conviction among some scholars (Ravetz, 1971; Nasr, 1981; Sardar, 1984; Needham, 1966) that, as the authors state,

there are grounds for a review of the notion current in historical geography that there were no ties whatever between Hellenic science and the science of the Far East in the last few centuries before the Christian era (1970a:565).

In challenging a general notion that no ties existed in the pre-Christian era
between Hellenic science and its Far Eastern counterpart, Gumilev and Kuznetsov attempt to demonstrate that these Tibetan charts combined scientific, historical and geographic knowledge. Not only do they reveal a cosmological doctrine, but according to the authors, they also display clear, albeit deeply encoded, information about both the Levant and Asia during the 2nd to 3rd century B.C.

Comparing the information extracted from these "deep codes" to what is known of Hellenic geographical knowledge, the authors resort to what Geertz (1984) calls "thick description," in order to claim that while Greek sources knew "little about the location of countries east of the Pamirs . . . Tibetan geographers had a fairly good knowledge about the Geography of the Middle East."

Beginning with the first of these cartographic "texts," Gumilev and Kuznetsov (1970a:565) turn the mythic into historic by interpreting a map of the country of Shambala . . . considered mythical until now . . . [and] which appears in the Tibetan -- Zang Zung Dictionary . . . [the authors] have been able to interpret some of the names and even to date the combination of place names as of the 2nd Century B.C.

Gumilev and Kuznetsov also suggest that the map data originates from Iranian sources which indicates that northwest Tibet was, from the earliest historic times, a cultural bridge between peoples of Inner Asia and south of the Himalayas and also peoples at different levels of social development. The method used by the authors to determine the toponomy was to transpose this "strange projection" onto "an ordinary map" where place names were plotted against known locations at different periods. Second, absence and presence of certain places and peoples as well as their description in Tibetan enabled the authors to fix a relatively absolute period of time during which the map could have been produced. Third, through linguistic analysis they were able to translate the toponomy so that the original map's "strangeness" was rendered interpretable. Without going into the details of linguistic correlations between names of
peoples and places and how they were interpreted from the Tibetan descriptions, we can simply state the authors' conclusions that, although

the knowledge displayed by the map compiler would thus appear to conform for the most part to the range of geographical information that became accessible at this time. . . . where could the Tibetan geographers have obtained so much specific information? Certainly not from the Greeks, who had a much less precise picture about the Middle East although they knew the Far East better. The informants must have been Persian scholars of the early Parthian period whose writings have not survived in the original. This is suggested by the area covered by our map and by the location of the centre of the ecumene at Pasaqadae, city that was already in ruins but continued to be a holy place for the followers of the ancient traditions of Iran, and by the absence of information about Greece and India, which were not part of the Achaemenid empire. Furthermore, our dating is supported by the statement in a Tibetan source that both ancient geographic and religious knowledge stemmed from Iran, from where it reached the northwest area of Tibet. We would therefore be justified in speaking of an Irano-Tibetan cartographic tradition (1970a:568).

Given the source of the map, the authors (1970a:568) admit that this conclusion may seem paradoxical, especially when

the valley of the Brahmaputra River was settled by the ancestors of the modern Tibetans in the first centuries of the Christian era, i.e., after the compilation of our map. It would appear to be evident, as Tibetan tradition incidentally confirms, that the Shang Shung country was the intermediary between historical periods and peoples. We know very little about the Shang Shung people, but its ethnic-cultural ties help explain the peculiarities of the Far Eastern cartographic tradition preserved in Tibetan sources.

Having established the authenticity of the map and its actual geographic information, the authors turn to a second Tibetan map representing a different tradition. They then search for a comparison which would support their contention that a synthetic method is necessary to revise our understanding of previous landscapes and levels of geographic knowledge. The benefit gained would elucidate some of the cultural characteristics of the particular ethnos holding that viewpoint. It would also provide another set of data to integrate into the synthetic method's multiple cross-correlations.
In comparing the first, Persian influenced, Tibetan map with the second, Indo-Tibetan one, the authors find another important factor; that linguistic references and toponomy can be compared and cross-checked. Moreover, comparing the cosmological and scientific levels of knowledge involved in constructing these cartographic representations provides a perspective on elements of the Tibetan ethnopsychology in that, "for the Tibetans, as for the medieval Arabs, geography was not only a practical but also a theoretical science," (1970a:570). From this proposition, they account for the inclusion of overlapping geographic information reflecting distinctly differing historic periods, along with mythological information all treated together as both a geographic and cosmographic whole. For example, the authors (1970a:570).

Outdated information about the world was often serenely combined with new data. Tibetan geography texts as late as the 19th century include not only the United States, France and other modern countries, but also the country of Shambala and the nations of Gog and Magog, which were, of course, treated as actual peoples. Therefore Tibetans have no historical maps in our sense, reflecting the situation in a strictly defined period; all we have to work with is coded information. But this information does enable us to set a "terminus post quem" [upper limit] to the date of the map since it does not show information received by the Tibetans after the time of compilation.

This fact, however, has made dating of the original Tibetan maps, a difficult problem and the authors surmise the 1st century A.D. as an upper limit, but does verify the significant level of geographical knowledge at that time. It also might be pointed out that the 19th century Tibetans hold no exclusive rights to such ideological time warps. An occasional glance at the American Christian Broadcasting Network in 1987 will show maps indicating Gog and Magog being displayed, while fundamentalist preachers with Ph.D.'s will argue whether it is Syria, Iran or the USSR that the bible identifies as Gog and Magog. One might also locate precisely on these maps, just where the "Anti-Christ" will emerge to attack Christians and the American system of "freedom" as it is being
imposed on the "heathen" Muslims to save their "souls" before Armageddon, which also has several alternate locations on the map. As millions of Americans and hundreds of thousands throughout the global reach of satellite broadcasting are treated to this cosmologically framed "geography lesson," we may wonder just how our ethno-geographical knowledge and perceptions compare with those of ancient Tibetans.

Returning to the cartography at hand, the second, Indic map incorporates a more Buddhist cosmographic representation of the world, but leaves room for speculation that some knowledge of the oceans and other continents existed. The question of whether or not it supports references to Herodotus and paleo-geographic data as claimed by the authors, goes beyond my competence and the bounds of this work. The recognition, however, that not only Tibetan, but ancient Chinese sources represented the Northern and Western barbarians as hairy, monkey-like creatures, comes as no surprise. But it is interesting to note that the 17th century Chinese considered these people as direct descendants of "the Usun, a Europeoid people who inhabited the Tien Shan at the beginning of the Christian era and [were] regarded as the ancestors of the Russians," (1969:578).

The final significant point here for our thesis is whether or not Gumilev and Kuznetsov have used a structural, semiotic method of interpreting the text. Is there an implicit link to V. Propp, and the Russian formalist tradition of folklore, literary and linguistic criticism (Tony Bennett, 1979) that becomes significant if we are to deconstruct available textual sources concerning historical geographic information? We may have here a link between the humanities as absorbed within the linguistics sciences which underlie contemporary "cultural studies," and a form of textual criticism converging towards a communications based social theory, integral to the "natural science"
of Gumilev's ethnographic "physical" geography. What is suggested, is the overlapping of method, allowing a semiotic treatment of geographical facts, while acknowledging the interpretation of geographic and archeological reports as constituting a system of discourse with recourse to its own rules, subject to the constraints of structural and psycho-linguistic models.

In earlier work, Gumilev has already implicitly suggested the expansion of semiotic methods, in his interpreting the ethnographic surfaces of ancient embroidered representation of facial features, by which nose types were used to distinguish ethno-types. Such interpretation can be subjected to dating and location methods. Here, the phenomenology of an integrated discipline begins to become clearer in its range of sources and possible methods. A hermeneutic and contextual treatment of all sources, and the establishment of some standard of commensurability within the theoretical framework of a physical-geographic "base" that supports a social "superstructure" seems more workable at this point. Certainly, at some stage, the recourse to a holistic science of man, or unified geography, would seem at the base of any ethnographic discipline, as it is even implicit in Gumilev's theoretical construct, despite his ideologically constrained resistance.

Having examined Gumilev's primary empirical work, including material outside of the Landscape and Ethnos series, and the foundation of his argument, we now conclude the first part of this thesis, and turn our attention to his epistemological concepts in geography and ethnology. The second part will examine how Gumilev develops his historical-geographic theory of man-in-nature using the rubric of ethnos-in-landscape. It focuses, however, on the epistemological context of Gumilev's dialectical approach to the interaction between the species as an element of the biosphere, and the social, or "intentional" aspect of human behavior, in creating cultural landscapes.
CHAPTER VIII

ON THE SUBJECT OF HISTORICAL GEOGRAPHY

This chapter examines a number of pivotal points developed by Gumilev in the third "Landscape and Ethnos" article. This article, partially discussed in chapter IV, also raises new methodological and epistemological problems. While the previous discussion focused on methods for gathering and synthesizing empirical data to reconstruct Inner Asian ethno-landscapes, the points raised here concern issues within the Soviet practice of historical geography. These issues are fraught with theoretical and practical problems which must be viewed within the cultural and political context of a post-Stalinist Soviet academic system, that, according to Preston James (1972:291), "works on a process of open discussion, consensus building and official positions."

Gumilev's work, as we can infer from its relative obscurity, does not represent an "official" position, nor does its terse reception indicate a consensus of support for his theory. Despite extensive publication that demonstrates Gumilev's participation in the polemical discussion, his theories remain in an "outsider" position. In fact, the 1975 seminar convened at Leningrad University to criticize and evaluate his debate with Kozlov (c.f. Chapter XVII and XVIII) concluded that, while he should be allowed to continue publishing, his "theory" of ethnoscapes and landscape should be treated only as "a working
hypothesis." As this indicates, Gumilev's right to be published was even under discussion. Moreover, his only further publication was five years later, and in the popular press, rather than in a scholarly journal (cf. Chapter XIX).

This situation undoubtedly sends a message, as his book, The Science of Ethnos, (1979) "was rejected as too controversial by major Soviet publishing houses, but was finally published in Hungary," according to Osiatynski (1984). While there appeared to be fairly strong respect for Gumilev as a scholar, it was also difficult to find a "niche" for his version of historical-cultural geography within the existing cells of a Soviet disciplinary matrix.

Gumilev's work and its theoretical implications were not taken lightly by Soviet academics, as is obvious from the range of discussion following publication of his studies from the mid 1960's onward. Prior to this theoretical period, his earlier work on the Huns (1960), Khazars (1966) and Ancient Turks (1967) were more historico-empirical, but in this article on historical geography he began to emerge from an "orientalist" stance and initiated a discussion on broader issues. His earlier works were less controversial in that they had an empirical orientation within a materialist epistemology combined with solid physical and historical data. In this latter respect, Gumilev falls squarely within a more conservative wing of Soviet geographic thought. The extent to which Gumilev broke new ground, however, can be seen in my next chapter on "unified geography."

In the debate over Anuchin's theory of a "unified approach" to geographical practice, current at the time of these early articles (1965-66), Gumilev pressed for a continued division between the physical and social categories. Partly, this complex debate centered on institutional differences between schools of geographic thought, partly on the dominance of physical geography and segregation of economic geography to a planning sector, and even
partly to rivalry between Leningrad and Moscow universities. In developing his concept of ethnos as a dynamic whole and to take a position establishing ethno-geography as a natural science, Gumilev sided with the "old school" physical geographers against the proponents of a sociographic method. All the reasons for his stance are not clear, in light of his own integrated approach.

In setting out his own methodology within the physical (natural) side of the discipline, Gumilev was careful to make clear which ethno-landscape processes can be subjected to his method of investigation, and which are more complex and less likely to yield conclusive evidence from the approach. Accordingly, in choosing the Inner Asian steppe landscape to distinguish intertwined patterns of ethnogenesis and bio-geo-climatical systems, Gumilev (1966b:33) noted that his choice of this region was sound in that the "degree of clarity" between zonal frontiers was more evident and variable than in other bioclimes. That is, in comparison to "the moderate climate of Europe and in the solid mass of the Siberian tayga," the steppe provided Gumilev with the ideal conditions for developing a synthetic, human-ecology oriented method of historical geography. In Gumilev's (1966b:27) view, however, that task calls for an initial agreement on "the meaning of the term historical geography."

In stating what he means by historical geography, Gumilev sets out a working hypothesis which underscores the argument and also sums up his prior work on ethnosc and landscape. He begins by defining historical geography in a manner which can later provide the operational propositions for a wider applicability of his thesis. Gumilev (1966c:35) claims the following:

1) regionalization of the ethnosphere has physical meaning, closely related to phenomena of the atmosphere and biosphere;
2) the basic differences between human consciousness and natural phenomena have been taken into account;
3) [it] deals only with that aspect of the ethnic way of life which correlates with landscape;
4) [the] proposed explanation of the mechanics of the process of influence of landscape on ethnos has nothing to do with (a) geographic determinism, and (b) an interpretation of the historical process as such;

5) it does not lie in the field of history, but in the area of historical geography, i.e., not a social, but a natural science.

To address these issues, and arrive at a clear agreement on a definition of historical geography, Gumilev (1966c:27) cites V. K. Yatsunskiy (1941), as a "historian of historical geography," whose study covers the discipline from the 19th century up to 1941. As cited in Gumilev (1966c:27), Yatsunskiy (1941:21) finds that the discipline of historical geography is

a science with an indefinite content, [and that its task] should be the study and description of the geographic aspect of the historical process, [and suggests four lines of investigation]:

1. the natural landscape of a given period, i.e., historical physical geography;
2. the population from the point of view of its ethnic character, distribution and migration;
3. the geography of production and economic links, i.e., historical economic geography; and
4. the geography of political boundaries and major political events.

Gumilev criticizes Yatsunskiy's definition, claiming it represents the perspective of a historian who "regards historical geography as an auxiliary historical discipline." While this subordination of the geographic element may be suitable for the historian, and poses "problems that are not important for the geographer," Gumilev (1966c:28) notes that Yatsunskiy's own survey (1941:21) reveals the failure of many hard working and able scholars to make any progress along these lines... The resulting works were encyclopedic in character, [as]... historians don't know their geography, and vice versa.

While Gumilev (1966c:28) "wholeheartedly agrees" with this appraisal, he finds an even greater problem, citing Oberhammer as saying,

as soon as a geographer leaves the areas of geographic research and starts dabbling in history, he stops being a natural scientist and turns into a historian.

Conversely, Gumilev finds that while Yatsunskiy's approach brings us to the
root of the problem," the problem itself "has not been correctly posed and no research methodology has been worked out."

Having identified the problem, Gumilev now takes on its solution by "correctly posing the question." But to place it in an epistemological context he turns to Yatsunskiy's (1955:3) later work for a more usable definition, in that, "historical geography is not concerned with geographical concepts held by people in the past, but with the concrete geography of past periods." To Gumilev's satisfaction, this second definition places the tasks of geography to the fore. While Gumilev (1966c:28) does not find Yatsunskiy suggesting any method by which to implement such an approach, he does finds that Yatsunskiy's work discusses theories of "geographic determinism" and "erudite history" in a manner which "makes it possible for the reader to become familiar with the history of the question and to tackle the problem directly." Does Gumilev imply here that, despite Yatsunskiy's definition, the historical geographer must become immersed in an independent reading of epistemology, or the historiography of historical-geographic thought before developing any theory or interpretation? Leaving the point suspended, Gumilev turns the discussion back to "posing the right question in a correct manner." Not citing Yatsunskiy's work beyond this point, it is not possible to ascertain whether Gumilev draws any further on Yatsunskiy's work.

Gumilev has rejected Yatsunskiy's earlier definition of historical geography, its division into four lines of inquiry, and its narrow positivism, in that it "serves the historian rather than the geographer." But by the same token, in accepting Yatsunskiy's second definition of a "concrete" historical geography that "is not concerned with geographical concepts held by people in the past," Gumilev rejects the approach to behavior characterized as historical perception. Instead of a social interpretation of the intellectual life of the
past, he opts for a materialist position which, albeit equally as positivist as the one he earlier rejected, is neither as narrow, nor divided into separate lines of inquiry. Moreover, according to Soviet criteria, the "concrete geography" with which Gumilev is concerned represents a "physical" rather than "social" orientation. Though some non-Soviet geographers might take issue with this positivist approach, or criticize its rejection of social perception, Gumilev's scheme is an avowedly materialist, empiricist and positivist project for reconstructing past human landscapes. But, as the Soviet "thaw" was only tenuously emerging at the time of his writing, a positivist facade likewise dominated the "Western" face of the discipline.

In terms of the problem of method -- how to pose the problem of a concrete geography of the past -- Gumilev finds that it has been posed along two paths: "(1) how do natural conditions affect the historical process? and (2) how do people influence nature?" But, in order to respond to the first path of inquiry, he requires that the meaning of the term "historical process" be agreed upon before it can be discussed, and poses three possible definitions. And yet, he argues, each definition limits the viability of this question in providing an adequate method for understanding just how historical process are affected by natural conditions. As to the first definition, he finds that

if [by historical process] we mean the development of society along a spiral through a succession of formations, then the geographic environment cannot affect such a spontaneous development (1966c:28).

Regarding the second definition, Gumilev (1966c:28) suggests that

if we are talking about wars, treaties or coups d'etat, then the reasons must be sought directly in the motives of the behavior of the participants as determined by their social affiliation.

Finally, as to the third possible definition, he reasons (1966c:28) that
migrations and ethnogenic processes are undoubtedly conditioned by elements of the landscape and correspond to climatic changes, but these phenomena lie on the border of historical science and in themselves do not exhaust the meaning of the "historical processes."

Before making any conclusion, however, Gumilev addresses the second "way of posing the problem." In this case he finds it easier to give a "definite" but not a "definitive" answer, in that, while people influence nature, just as incidentally, any faunistic forms do. But it is impossible to determine the general character of such human influence because it varies widely in time and place. Sometimes people become part of the biocenosis of the landscape, sometimes they adapt the landscape to their needs. [But] neither process depends on the cultural level or ethnic character of the particular group, only on the character of its development and local conditions (1966c:28).

Therefore, he concludes, while "there is a relationship" between people and the landscape they influence, "it is neither direct nor simple." As neither question can stand independent of the other, nor can either be fully answered, Gumilev rejects both lines of questioning.

Because of the preceding reasons, Gumilev refuses reducing the primary question in historical geography to a binary "either or" -- either natural conditions affect the historical process, or people influence nature. Rather, he poses the question in another way, and draws on Vernadskiy's concepts of biosphere, to suggest that we look at mankind as a certain environment covering the earth's land surface. The fact that this environment is not continuous does not matter. That is the way Vernadskiy posed the question of the biosphere and it yielded a vast body of scientific results. We can study this environment by means of the methods of natural science. But for success we must observe one condition: our measuring stick must be commensurate with our research capabilities. It should be applicable to any place on earth where people live, to any historical period known to us, and to any level of civilization. Only one phenomenon can supply such a measuring stick: it is the ethnos, or ethnic character of any people (1966c:29).

Here we encounter the cornerstone of Gumilev's theory of ethnos as the primary agent within a historical geography of landscapes. First, as he required an
agreement on the meaning of terms, so his proposed approach to historical geography in which "all of mankind as a certain environment . . . [can be] studied by . . . the methods of natural science," must be situated in some context. For example, Jordan and Rowntree's (1986:16) well known geography textbook distinguishes cultural from human ecology, defining the former as

the cause-and-effect interplay between cultures (people as culture-bearing animals) and a physical environment, [and the latter as] the study of human populations . . . in their physical environments in much the same manner as noncultural animal populations.

As we shall see, Gumilev intends to integrate both aspects of ecology within a science of ethnos, that tends, however, towards the population approach.

We now encounter the beginning of an long evolving process by which Gumilev continuously attempts to more accurately define the exact nature of ethnos. After all, if ethnos is to function as a measuring stick for reconstructing historical communities, it must be broad enough to cover "any place on the earth . . . any historical period and any level of civilization," yet specific enough to be meaningful at each level of analysis and for each case. In the following proposition, Gumilev attempts to define ethnos as a primary, if not primordial, natural phenomenon, a process by which human populations are differentiated and organized as units of different sizes through natural conditions, as

the form of existence of the species Homo sapiens is a group of individuals distinguishing itself from all other groups. Such groupings are more or less stable, although they arise and disappear over time, thus giving rise to the problem of ethnogenesis. All these groupings differ more or less from one another, sometimes in languages, . . . customs . . . ideology . . . [or] in their origins, but always in their historical fate (1966c:28).

Here, then, are three primary characteristics of an ethnos, (1) it consists of a group of individuals, (2) it has a life-cycle, and (3) it may vary in the attributes by which it differs from other ethnoses, except for its unique
historical fate, and hence, individual lifecycle. Consequently, there arises a dialectic process, in which, Gumilev states

the ethnos \([\text{both}]\) derives from the historical process \[\ldots\] \([\text{and}]\) is related through the obtaining of food \((\text{economy})\) to the biocoenosis of the landscape in which it was formed. Later on, the ethnic character may produce changes in this relationship, but in so doing it also changes to the point of becoming unrecognizable, and further successes can be traced only by the historical method \((1966:\text{20})\).

Implicitly, in Marxist philosophy, the historical process refers to the social being of mankind. Can we, therefore, conclude that only the initial ethnogenesis is a natural process, and that the further evolution of the process by which an ethnus interacts with its encompassing landscape is a purely social phenomena? I do not think that Gumilev means that the natural phenomenon of an ethnus, particularly its lifecycle and natural economy \((\text{biocoenosis})\), ceases at a certain point and thereafter is measured only in socio-historical terms.

Rather, we might think of it as a reciprocal process that runs throughout the lifecycle, and in which one set of factors \((\text{natural or social})\) may prevail at any one time after its genesis, i.e., this process continues after an initial series of transforming events. As we will see throughout the series, this issue presents certain problems to which Gumilev returns at several points. It is also a major philosophical problem for contemporary geographers and social scientists who are arguing the human agency-structuration issue, \((\text{c.f. Giddens 1984, and Derek Gregory, 1978})\), or other current notions, e.g., Foucault's \((1984)\) "epistemic ruptures" which also posit discrete events and shifts in the transformational process.

While Gumilev has presented some of the attributes of ethnus as a process, he has not as yet defined "the thing itself." In stating "what we mean by ethnus," Gumilev first proposes that:

there is no single criterion for defining ethnic character as such although there has never been and is not now a human individual
without ethnic character. All the criteria listed below define
ethnic character sometimes, but the sum of these criteria define
nothing whatsoever (1966c:29).

Listing four major categories standardly used as criteria for defining ethnos,
Gumilev challenges the status quo, by negating each one as a possible primary
criterion for ethnos. In so doing, he rejects the sociological schools of
intentional ethnicity within a mass society, whether the Soviet version, i.e.,
in particular V. Kozlov with whom he has a particularly vociferous debate, or
its American counterpart, i.e., best represented by the Glazer and Moynihan
approach to ethnicity. Testing his hypothesis by negation, Gumilev is able
to reject each of these four categories and arrive at the pivotal concept that
only one universal criterion exists -- recognition -- all other characteristics
of ethnos being only surface manifestations of it, as follows:

1. Language. Various ethnic groups often speak the same language
... [e.g.] Spaniards and Mexicans ... often a single people
speaks several languages ... [e.g.] the Chinese speak two, not
counting dialects ... in addition there have been class languages
... [e.g.] Arabic in Persia from the 7th to 11th century. Since
such linguistic diversity did not effect the integrity of the ethnic
character, it must be assumed that language is not the key criterion.

2. Customs or Culture. Most large ethnic groups are made up of
several ethnographic types that constitute a harmonic system, but
differ substantially from one another in both time and social envi-
ronment. ... And how about the differences in material culture and
way of life among the aristocracy, petty nobility, peasantry, mer-
cants, clergy, intelligencia and workers of any of these prerevolu-
tionary periods? But they did not disrupt ethnic unity and despite
similar ways of life, the Cossacks, say, did not merge with the
Chechens and Tatars.

3. Ideology or, in the old days, Religion is also sometimes an
ethnic criterion, but not always. For example, only an Orthodox
Christian could be a Byzantian, and all Orthodox were regarded as
subjects of both the Emperor of Constantinople and of their own
rulers. However, this did not work out in practice. [as not all
Orthodox had] the intention of becoming a Byzantine vassal. The same
principle of a single faith was proclaimed by the Khalifs [sic. 
Caliphs], successors of Muhammad, but could not stand up to the
problems of real life: [since] within the unity of Islam a number of
ethnic groups arose. ... On the other hand, religion sometimes
helps combine people into an ethnic group: for example the Sikhs of
northwest India, or the Osmanli Turks... but [other] Sunnite Moslems, subjects of the Sultan... did not regard themselves as Turks... In other words, religion cannot be regarded as a universal ethnic criterion.

4. Origin. Every people is descended from various ancestors. Two or more components always figure in the process of ethnogenesis. The crossing of several groups sometimes gives rise to a new stable form, and sometimes leads to extinction. Thus, a mixture of Slavs, Ugrians, Alans and Turks gave rise to the Great Russian ethnic group, and various Mongol-Chinese, Turkic-Chinese and Manchu Chinese mixtures formed along the Great Wall of China over the last 3,000 years proved unstable and disappeared (1966c:30).

In reviewing these four standard criteria of ethnos, Gumilev delves into the Osmanli Turkic example more than any other. As he finds that their history is "worth recalling" as an example of how religion can be a factor in ethnogenesis, but concurrently, not a universal criterion of it, let us look at how he presents it:

the first sultan Ertugrul, had 50,000 Turkmen horsemen and, having been granted a piece of territory on the border of the Nicaean empire, started to gather around him ghazi fighters for the faith. He and his descendants were joined by Kurds, Turks, Arabs, Persians, and Syrians; in addition, the Turkish sultans bought Circassians and Georgians for military service, converted boys from Bulgaria, Serbia and Macedonia (Janissaries) to Islam, and attracted renegades from France, Germany, Italy. They often married slave women supplied by Tatars from Poland and the Ukraine. But since the overriding element was Sunnite Islam, the descendents of this assemblage regarded themselves as a single people, Turks, distinguishing themselves from the Shiites, the Persians, and the Azerbaidjan Turkmen. But there were also Sunnite Moslems, subjects of the Sultan, who did not regard themselves as Turks, namely Arabs and Crimean Tatars. For the latter not even linguistic proximity played a role (1966c:30).

The assumption that all these groups who were included within the Sultan's rule and Sunnite organization were ethnic Turks, certainly gives a broader definition to ethnos. It might be too loose, except for the fact, as we shall see later, that Gumilev builds a hierarchical model whereby there are levels of ethnic units organized as taxa within the largest, superethnos. In this case, the superethnos is Islam -- the Muslim superethnos -- and Turks, as defined here by Gumilev, a subordinate unit, or ethnos, while those subethnoses
mentioned were capable of being both absorbed into the Turkish ethnos yet able to maintain a distinct subethic identity—where feasible. This systematic organization of ethnic units provides the vitality to Gumilev's model, especially in terms of its use in interpreting the Muslim world, with its "Chinese box-like" nesting hierarchy of ethnicity.

An overview of the four criteria negated by Gumilev as possibly providing a single universal criterion for ethnos finds their fate shared by any other contender to that role, with one exception. Gumilev reduces all criteria to a single construct which he claims to be

the one, permanent universal criterion of ethnic affiliation, and that is the personal recognition of every individual that "we are such-and-such and everyone else is different" (1966c:30).

And yet, what does Gumilev mean by this simple statement of difference? Yes, we might all feel that we are "such-and-such," but what is that feeling in some operational terms, or what objective criterion can be derived from such a blanket statement? Gumilev states that "it reflects a certain physical effect and has some physical meaning." But he then rejects the physical as important. Rather, what he finds useful, hence important, is that this "recognition of difference" provides a "measuring stick of historical geography." Does he then exclude its vague physicality from what becomes a heuristic device? If so, that would annul his claim on it being a phenomenon of nature, hence having a material reality. The problem presented here by Gumilev, and not adequately answered, is how to relate the concept of ethnos as an indicator of natural processes to those actual processes and their embodiment in some group of people, their behavior, environment and artifacts. To understand this dilemma, we must return to Gumilev's argument and examine his treatment of "ethnos the measuring stick."
Without repeating the discussion of this issue in chapter IV, (cf. p.72), the importance of ethnos as an indicator of historical geography, is inextricably tied to "the landscape" as its corresponding indicator of the physical environment. The twin indicators -- landscape and ethnos -- give the researcher a measurement of a combined historical and physical geography. In fact, as Gumilev (1966c:31) now redefines it, "historical geography is the science of post-glacial landscape in its dynamic state, for which ethnos is the indicator." He concludes that the significance of ethnos is in providing the same measuring stick for historical geography that landscape has provided for physical geography, because a landscape to which people are accustomed encompasses them, and "determines the way in which people can make a livelihood." However, as an indicator of a dynamic post-glacial landscape what can ethnos tell us, analogous to the economic indicators provided by a landscape? Or, although it is plain that ethnos may point to, or be a highly significant concept for historical geography, can it really, as Gumilev suggests, be "a common denominator for a vast number of historical and geographical phenomena?"

Gumilev seems to think that ethnos as an indicator can provide both data analogous to landscape's economic meaning, and act as a synthesizer of the dynamic interaction of social and natural phenomena. To demonstrate such a role, Gumilev proceeds to apply that concept to answer the five questions, or lines of historical geographic inquiry, asked earlier by Yatsunskiy (cf. pp. 4-5).

First, Gumilev approaches the concept of landscape as inseperable from that of ethnos. He finds that, in fact, the definition of one approximates the other. Turning to a definition of landscape by one of the foremost geographers who specializes in it and its philosophical meaning in its use as a concept within the discipline, Gumilev finds that the physical geographer Kalesnik's definition of landscape approximate his own descriptive definiton of
ethnos. This provides a crucial link in the argument and an insight into how Gumilev approaches this field as natural science, distinguishing between history and a materialist historical geography. Kalesnik's definition (1959:3) offers the following distinct points for analysis:

1. Landscape is an actually existing, genetically homogenous part of the earth's surface;
2. It is bounded by natural boundaries;
3. It possesses individual features that distinguish it from other landscapes;
4. It represents not an accidental or mechanical combination of components, but a regular, internally related pattern of structural characteristics;
5. It is unique in space and time;
6. It has a territorial integrity;
7. Internally it is morphologically heterogenous because it is made up of a number of lower ranking territorial complexes;
8. At the same time it is homogenous because the overall pattern of combination of its heterogenous components and structural characteristics the same throughout the landscape (1966:28).

Obviously landscape and ethnos affect each other, but to the extent that "the geographic environment influences all aspects of the historical process"? Here, Gumilev rejects the all inclusive influence of the physical environment and calls for clarity regarding "what fits and what does not," which distances him from geographic determinism, citing the mistakes of "Montesquieu, Bodin, Buckle, Reclus and, in Russia, Lev Mechnikov." But in North America the prevailing discourses of cultural geography makes no such clear distinctions between terms that distinguish geographic from social environments. What we must continue to "read" in his text, then, is that "geographic" means the natural, physical environment, and is used in distinction to "historic," or social milieux. Probably the safest route to interpreting the meaning of such terms used differently throughout the text presented here, is to keep in mind that it is not a distinction caused by translation from Russian, but rather is implicit to a particular Marxist discourse in any language. Therefore, the importance of defining terms continues to increase as Gumilev draws from
lines beyond geography. Each term is not only used in a context different from its own discourse, but also must be filtered through the interpretive screen of Soviet philosophical usage. For example, Gumilev strongly intimates that Kalesnik's foregoing definition of landscape becomes almost interchangeable with ethnos, and this will play an important role in how these two terms are used throughout the text.

Another problem arises in the analogy between ethnos and landscape. Can we, for example, simply substitute "process" for "part" in Gumilev's appropriation for ethnos of Kalesnik's first proposition defining landscape? i.e., that it "is an actually existing, genetically homogenous [process] of the earth's surface." This substitution of ethnos for landscape and process for part, does provide a partial descriptive indicator for Gumilev's definition of ethnos. Is it appropriate to derive such an analogy from a theory of regionalization? Again, changing the statement to "ethnos is an actually existing, genetically homogenous population," opens up the same problem, as elsewhere Gumilev defines an ethnos as being genetically heterogeneous. While each rewording brings us closer, on one hand, to a usable definition, in that Gumilev later defines an ethnos as both a process and a population, in this case, the restrictive component of genetic homogeniety distorts any direct analogy. Furthermore, given his thesis that ethnogenesis is an energetic process absorbed within the embodied psyche of a certain proportion of a specific population, then it stands to reason that no single criterion other than "mutual recognititon" of an inherited, "behavioral stereotype" can possibly be the basis of ethnos. But, however those characteristics are transmitted, Gumilev emphatically rejects a genetic medium. Rather, he proposes a psycho-biology of ethnos in which those specific behavioral elements are transmitted through the rhythms of a shared way of life and manifested as in surface patterns of
language, culture, etc. While these surface elements cannot in themselves be adequate criteria of ethnos, they can, and often do, represent token characteristics, recognizable on the surface.

Here we may ask about the role of genetic homogeneity in terms of what van den Berghe (1982:16) has called a "kin selection process accounting for the primordial aspect of ethny" [sic. his preferred term for ethnos]. I would, however, tentatively support a stronger genetic correlation between behavior, ethnos and environment. Therefore, as Gumilev did not specifically oppose the use of that part of Kalesnik's definition of landscape (genetic homogeneity), in constructing an analogy to describe ethnos, I will reserve the option to point out later the inherent genetic connection implied in Gumilev's discussion of natural selection in ethnogenesis. Finally, assuming that a relatively homogeneous population develops over time within any stable ethнogenic process, it might better be described as a tendency, or to paraphrase Kalesnik, "ethnos is a population tending towards genetic stability," may be the more appropriate formulation.

Confronting Kalesnik's second proposition, that "individual features" distinguish one landscape from another, and by analogy, one ethnos from another, natural boundaries represent one of the most difficult problems of concern to both regions and ethnoses. In fact, this problem probably explains why many researchers retreat into the illusions of census data and discrete political units where less ambiguity makes for more reliability, even if it reduces the product to less meaningful, and more abstract, information. As for the rest of Kalesnik's definition, at this stage of Gumilev's theory construction, it stands up well for both landscape and, by analogy, for ethnos. Boundaries are both natural and artificial. In the case of human populations, Gumilev might argue, the initial boundaries of an ethnos are a result of its geographical
dynamics, i.e., a natural process, and as ethnosgenesis interacts with social factors, they too are natural. The other side of the argument, however, is generally represented in social anthropology by the instrumentalist position.

Exemplified by Barth (1969), the instrumentalist position claims that boundaries are strictly artificial, in a sense of situational, flexible and intentional. In Barth's view, although boundaries may possibly have "territorial counterparts," they are, social. Therefore, while ethnic groups are not necessarily based on the occupation of exclusive territories . . . the ethnic boundary canalizes social life." Later we will find an important analogy at the genetic level to "canalization" of behavior by ethnic boundaries; a natural correspondence to the social. Parallel to Gumilev, Barth (1969) also focuses on recognition as the basis of ethnic identity, stating that,

the identification of another person as a fellow member of an ethnic group implies a sharing of criteria for evaluation and judgement for evaluation . . . [and conversely], a dichotomization of others as strangers . . . as members of another ethnic group, implies a recognition of limitations on shared understandings, differences in criteria for judgement of value and performance (1969:15).

Barth's crucial notion about boundary maintenance is one of situational interaction, which he refers to as following Goffman's (1959) use of the term, i.e., involving certain prescribed "systematic sets of rules governing inter-ethnic relations." Accordingly, an interaction need not involve codes and values outside of the specific situation of that ethnic encounter. Finding a congruence between Barth's instrumentalist approach and Gumilev's primordialist position regarding the importance of recognition, does not override a difference in their understanding of the basis of recognition, i.e., the human intent versus a more organismic base in the codes for displaying and reading difference.

Returning to Gumilev's definition of historical geography, we find that he assumes it will
eliminates the need for assessing the effect of the geographic environment on the historical process. ... [as] in our approach, the phenomenon of interest ... are not counterposed to the environment but are part of it. [Moreover] This part of the environment is the most sensitive to any global influences, and therefore any changes in it make it possible to judge the character and even magnitude of ... fluctuations [in the physical geographic environment] (1966c:31).

While already discussed in chapter IV, this point further strengthens Gumilev's argument for a synthetic method, especially when combining ethnos and landscape as co-indicators for the state of a people and its encompassing environment as a single unit. Gumilev's intent, I believe, is to evaluate all of the aspects of such an integral unit, from its "character" to "the magnitude of climatic fluctuations." I find this method analogous to the regional approach, or the "genres de vie du pays" -- the way of life of a place, only with ethnos as a more concise indicator of that ensemble, and one with greater mobility and adaptative capacity. Again avoiding the pitfalls of environmental determinism, Gumilev nears the possibilist position, giving examples of the impacts and importance of human agency, as "undoubtedly of great significance for the landscape." Gumilev (1966c:31) also makes another assumption, that avoidance of geographic determinism only requires a classification of phenomena to establish categories by which aspects of the historical process are related to physical geography and landscape science, [and thus we could] determine distinctive patterns of relationships, and not mix them up.

If we assume that historical geography is the science of dynamic landscape as indicated by ethnos, human activity would then reflect changes in the ecological balance, experienced through varying adaptations, material culture, or emigration. These bio-geo-chemical processes can be measured within ecological layers and structure at certain stages of ethnogenesis, while at others only the historical method describes whether or not human agency is involved. This issue responds to the second part of Yatsunskiy's (1955)
question, i.e., concerning man's impact on the environment. Though dealt with in chapter X, Vernadsky's term of "noosphere is rejected by Gumilev because human agency has not so much shown "mind" (noos) but more often a self destructive urge to despoil environments. My corresponding thought finds an analogy to the comment by a noted ethnologist (Dawkins, 1981), that because proto-humans slept in trees, our bioprogram has been conditioned to drop wastes from our perch on the ground below, regardless of whatever creature or habitat happens to be underneath. Familiar to New Yorkers, the high-rise phenomenon of "airmailing" garbage down airshafts, represents a contemporary analogy to the wastes pitched out the upper windows of European townhouses in the last century, or from trees by our Simian forebears. But in recognizing man's role in changing the surface of our geographic environment, or creating landscapes, Gumilev discusses four significant categories of human economic activity and their respective effects on landscape: 1) agriculture, which has greatly changed the landscape, causing erosion and deforestation; 2) stock rearing, with its particular impact on wild animals and grasslands; 3) hunting, with its extermination of animal populations; and 4) the construction of big cities and their artificial landscapes. But he also concludes that "even such a brief survey of possible influences shows that various peoples affect the environment in different ways," creating discrete landscapes that range so widely in time, place and level of socio-technical capacity, that it is not fruitful to pose the question in a generalized fashion. At the same time, it must be borne in mind that we can observe only the results of the integration of changes in natural conditions plus the activity of ethnic groups, and that the reconstruction of the role of the one on the other requires retrospection, which is always difficult, though not hopeless (1966c:28).

That process, however difficult, can succeed in Gumilev's opinion, but not by relying solely or directly on historical sources. Rather, he proposes,
the only reliable basis for reconstruction [of historical communities] is a canvas of facts of identical scale, arranged in a chronological table. Such a table reflects historical reality with the greatest precision (1966c:32).

When such facts are extracted from historical texts, archaeological and geographic sources, it is through the co-indicators of landscape and ethnos that they can be compared at an identical scale.

To give an example of a problems arising when a method relies on less than a holistic approach to finding and using commensurate facts, Gumilev cites methodological clash between two great historical geographers, L.S. Berg and Grum-Grimaylo, over the "direction of climatic change" and desiccation in Central Asia. Both scholars, according to Gumilev, used material from historical and sources, "but in different ways." In processing his data, Berg reportedly "analysed each fact individually and often reported without comment the opinions and views of ancient authors," while Grum-Grimaylo synthetically viewed the entire 2,000 year sweep of the region's history, "as a whole." Berg was proven wrong. According to Gumilev, the reason that Berg's analysis failed to accept desiccation as the cause for depopulation of the Alashan steppe, was not only that he relied on historical sources to blame Genghiz Khan for devastating the region, but that desiccation must be assumed. If the steppe areas had been reduced after the war of 1227, [only by war] it would have been quickly repopulated, first by wild hoofed animals, later by herds of animals domesticated by the same Mangols, and would not have been a desert by the 19th century (1966c:32)

Had Berg availed himself of a synthetic method, he would have avoided such confusion in concepts; as no matter how excellent his textural sources, "reliance on historical sources without regard to preceding and subsequent events, can lead the researcher astray." Therefore, the synthetic method allows for a higher congruence of atypical facts and permits a more accurate reconstruction.
At this point, Gumilev (1966c:28) introduces the notion that to facilitate any reconstruction, a primary classification is essential, as the historical fate of the people under study is the product of its economic potentialities, thus related to the dynamic state of the encompassing landscape... [hence] either the people adapts itself to the natural conditions, or it adapts the conditions to itself.

As the term "encompassing landscape," involves a totality of the interactive human-natural system, we may interpret his statement as calling for a natural history of human habitation and ethnos. But such a history must also take account of the dialectic between the two directions of adaptation, i.e., "the people adapts itself to the natural conditions, or adapt the conditions to itself." It would also have to conform to Gumilev's ethnogenic model, in that such an adaptation of natural conditions takes place only once during the entire period of existence of each people. Once that giant transformation was accomplished, there remains only maintenance of the encompassing landscape without further changes (1966c:33).

Gumilev, however, again warns against neglecting the corresponding aspect of human agency, citing (1966c:32) a further example of this problem, "as shown by the experience of Grum-Grzimaylo, who in his polemics with Berg,"

...did not bother to make a classification of crops based on their interaction with nature. As a result, it seemed to him that the moisture supply of Inner China and Sinkiang depended on the activities of the agriculturalists, who cut down forests and filled in wells in fear of an enemy. Although these actions played a certain role, man's influence on the environment until the 19th century was limited to local zones that have been thoroughly studied and should be set aside for special investigation to take account of man's activity. Elsewhere changes in the landscape depended on natural conditions, which affected agriculturalists and nomadic herders equally.

One caveat needs stating here, in the above passage, Gumilev's conclusion refers to Inner Asia, rather than to environments in general. Otherwise, his conclusion about human agency would have to be rejected as too close to an environmentalist position, although it was clearly not Gumilev's intent, as he outlined five areas of economic activity, both here and in chapter X,
indicating significant historical examples of human agency in landscape change. Furthermore, he states that, "it would be wrong to assume that peoples who do not transform their natural environment are primitive or underdeveloped."

Comparing the Inner Asian nomads to agrarian peoples and their civilizations, he finds that although

The ancient Greeks and Arabs had an extensive agriculture and, at the same time, created great works of literature and art, complex social forms and even developed technology . . . The same can be said of Central Asian nomads, whose culture was basically different . . . [but] also created a stable way of life, their own technology, their literature, and their statehood on the basis of a nomadic herding economy. Although neighbors of the Chinese, the nomads did not adopt Chinese writing, social institutions or customs. The nomads' ethnographic distinctiveness was based on their economic system, which, in turn, was adapted to the steppe landscape that supported it. It can be said that the nomads constituted an inseperable part of the landscape together with its plant and animal life. Therefore, study of the history of the Eurasian nomads sheds light on the history of natural conditions of the territory they inhabited (1966c:33).

The preceding passage reflects both the strength and weakness of Gumilev's overall approach; its strong relevance to the historical geography of Inner Asian nomads, its increasing problems of accuracy when applied further afield. Nevertheless, Gumilev provides an excellent example of how to apply his method in establishing differences between eastern and western sectors of Inner Asia, each involving a distinctive congruence in climate, terrain, culture, ethnographic characteristics and political systems. Having discussed this difference in chapter IV, we can move to Gumilev's conclusion that

our regionalization of the ethnosphere has physical meaning and is closely related to phenomena in the atmosphere and biosphere. The basic difference between human consciousness and natural phenomena has been taken into account, and we are dealing only with that aspect of the ethnic way of life that correlates with landscape (1966c:35)

In explaining the process through which landscape influences ethnos, Gumilev concludes that this method of lies outside of the field of history and within that of historical geography, and is, therefore, a natural science.
Recapitulating the Important Issues

Regarding Gumilev's conclusions, the important methodological issue here concerns not only the integration of historical and natural facts, but also of the synthesis of dichronic and synchronic information. As Porshneva (1979) states, it may not be a question of either-or, but rather a question of both-and. Not all human adaptations are separate from environmental modification, nor do natural changes in ecological conditions always destroy the human infrastructure and prevent readaptation. In many cases, it is difficult to determine which element -- social or natural -- initiated or concluded an environmental process radically transforming the landscape. A more probabilistic see-saw model would certainly apply in the case of North African desertification. Current research in that area (M. Abdul Bagl, 1982) has shown a distinct combination of macro and micro processes leading to progressive desertification. On the human side, we have: political factors involving border checks of natural nomadic migratory cycles; demands for cashcrop earnings pushing agriculture further into peripheral zones of periodical dry farming and range lands; artesian well drilling causing settling around the water by large, formerly migrating herds; and ethnic devolution in post-colonial wars of national liberation. All these factors have contributed to a unique transformation of individual ecosystems throughout a large area, within an increasingly unfavorable climatic regime.

Conversely to destruction of nature in the process of landscape modification, it is not natural man, but rather social man whose artificial investment of labor and technology can reverse or modify environmental change, even if they are natural in origin. While we have to see an increasingly powerful socio-technical sphere of human endeavour as separate from a natural
limitation of adaptation, the ethno-cultural aspects of tradition and decision making regarding use of, as well as access to, technology provide a biosocial limiting factor on its impact.

Explaining the underlying structure of recognition later in his thesis, Gumilev still leaves ample room for both widely differing use of the principle, and further interpretation, leading to a critical problem. One could, for example, treat the Muslim world as a superethnic entity, as Gumilev has, and avoid the problem of viewing it through the criterion of religion. As we see that Gumilev has both rejected and negated the category of religion as a criterion for defining ethnics, we can turn to his proposition that recognition has a physicality which can identify and explain the phenomena of ethnic difference attributed to religion. Therefore, one could state that intentional religious belief in unnecessary for the mutual recognition between Muslims, as in Rywkin's (1984:11) statement that even an agnostic can adhere [to] a feeling of belonging to a group distinguishable from others . . . by . . . a particular rhythm . . . felt in . . . the way of life . . . which we characterize as Islamic.

And yet, can all of the environmental criteria of landscape and ethnics as co-indicators of the historical and physical geography, so necessary to Gumilev's model at this stage, be applied to the Muslim world as a hierarchal system of ethnics and landscapes? If so, what are sufficiently common environments analogous to the Eurasian steppe? Even if it is more difficult than the Inner Asian examples studied in depth by Gumilev, enough features are common to both regions that despite vast historical and physical differences, the analogy is much easier than in a less extreme, more ecologically diverse environment of the temperate zones. Therefore, the Muslim world system would seem to provide a transition for applying Gumilev's model from the Inner Asian steppe to more complex regional ethno-landscape formations.
One basic purpose of my research was to examine Gumilev's theory of landscape and ethnos. His theory of historical geography arose from a field-based empirical investigation. But, to operationalize the theory as a hypothesis subject to testing for its powers of explanation or interpretation, requires either an entirely new set of comprehensive field data, comparable to Gumilev's, or turning the focus in on itself. As the latter approach is being taken, the main question is how well Gumilev's model stands up to an analysis of his own argument and supporting data. This necessarily entails its comparison to other standard references in each area. In the following chapter I will examine Gumilev as he explores methodological issues in the broader field of Soviet geographic practice. In this I seek to situate his method as a subdiscipline in an epistemological branch of physical geography. With the method and its theoretical construct epistemologically situated, a geographical model of ethnogenesis can now be developed.
CHAPTER IX

ON THE SUBJECT OF UNIFIED GEOGRAPHY

Working towards operationalizing his concept of ethnos and its encompassing landscape as co-indicators of geographical change, Gumilev enters into a contemporary debate within Soviet geography. For the past six years, the main polemics within the discipline had revolved around D. A. Anuchin's controversial thesis for a unified geographic methodology. Soviet academic organization along a division between physical and economic (human) geography remained relatively stable until questioned by Anuachin who triggered a debate which Gumilev found "cannot fail to involve any geographer who lives his field," (c.f. on unity, see Trans. I.B.G. 11.4.1986:441-467). This controversy split Soviet academics into opposing camps, Anuchin's supporters being principally economic geographers, while opponents were mainly from the physical side. Gumilev, as a lonely "historical-cultural" geographer seems to have stayed out of the fray up to this point. But he now finds it fruitful to single out some of the points raised in the first stages of the discussion." He uses this opportunity, however, to focus on points of contention bearing directly on his own theories, and to interject discussion on the co-relevance of landscape and ethnos to geographic methodology. Here, he opens up the topic of ethnos as an aspect of population and its interaction with other factors in the landscape.
which collectively give rise to ethnos. In arguing for a theory of ethnogenesis derived from an integrative method, Gumilev rejects the necessity of integrating "the geographic disciplines," as such. Rather, he finds that the method actualizes "a framework of a special discipline, say, ethnology within geography" (1968b:36).

Gumilev begins this discussion by agreeing with Anuchin that "the dominance of society over nature is qualified and that man himself is part of nature." But he questions the universality of that proposition, citing doubts raised by Anuchin's further statement that "the development of society has been regarded in isolation from the development of nature and vice versa." Then again, he differentiates between the development of nature and "the development of the geographic environment," the latter being more closely related to "the life of society." Moreover, in defining the relation between the geographic environment and the life of society, Gumilev recognizes a further distinction in that the environment is

not only and not simply external nature, but a distinct part of external nature, a distinct form of motion of matter that forms a material unity with society (1968b:36).

In other words, he claims the principle of relevance, excluding other parts of external nature that do not, in general, materially interact with society. We should remember throughout this discussion, though, that the Soviets do not use the term society to refer to the social behavior of other species, but only to human social formations. Then too, the problem of defining an exclusive set of natural phenomena co-variant with human social activity raises the point that mankind is not only "one of the elements of the biosphere," and must be treated as a "society [which] implies a specific form of collective living characteristic only of people at a certain stage of development, and not the only such form." Therefore, given the premise of historical materialism, that
society possesses its own rhythm of development along a spiral, or a spontaneous progressive development, while being subjected to external influences. The question inevitably arises: what aspect of mankind is joined with nature and the surrounding geographical environment and what aspects of society are the product of its own development? (1968b:36).

Gumilev now faces a pivotal question in his construction of a theory of ethnos as a natural phenomenon outside of the spontaneous progress and auto-production of society. First, he has established an interactive connection between some elements of nature that arise within the geographic environment and are commensurate with the life of society, and which, in fact, are indispensable to it. Second, he must now distinguish between these and other co-present elements that are socially produced, and which together constitute the anthroposphere as a bio-geo-chemical-social ensemble. To accomplish this task which has been given priority in Soviet philosophical geography, Gumilev now parts ways with Anuchin's proposed solution. Gumilev, however, agrees with Anuchin, in that erroneous views about geography can be overcome only through creation of a proper conceptual framework . . . [and notes] that the value of V. A. Anuchin's concept lies its posing the old question of the character of relations between mankind and the geographic environment rather than in the solution he poses for that problem (1968b:37).

Gumilev takes issue with Anuchin's thesis that geography must be unified through "the integration of individual geographic disciplines. But what does he propose instead to solve this overriding problem for geographers, as well as for the wider academic community concerned with this issue. Here Gumilev (1968b:37) calls for all concerned to take account of the sum of our experience, of everything we know about the ways in which people influence nature and nature people. In short, we must hark back to historical geography and history.

To accomplish this task of harnessing the collective disciplinary wisdom in order to solve the problem of man-nature relationships, Gumilev has
called for research to focus around the nucleus of history (a social discipline) and historical geography. Using his definition of historical geography as "the science of post-glacial landscape in its dynamic state for which ethnos is the indicator," (cf. p.193), we assume that Gumilev views his own methodological construction as a nexus for a broadly collaborative research programme. He supports the approach put forward by S. V. Kalesnik (1965, 1966), who finds any integration of the sciences impossible, in contradistinction to Anuchin's call for "an integration of the sciences." Gumilev's view holds that an integration of scholarly ideas and of a complex of information is needed, provided that they will be subordinated to the purposes of scientific synthesis, i.e., as material for the sort of empirical generalizations that Vernadsky compared in level of reliability to an actually observed fact (1968b:37).

The approach proposed above necessarily entails a high degree of generalization. First, empirical observations from highly specialized fields of research must be able to fit together in some commensurable manner. Second, any theoretical framework which can encompass and operationalize such diverse data must also necessitate a dilution of the strict conceptual boundaries within which the research has been performed. As Gumilev (1968b:37) states, some holistic integrating principle must underlie an approach [which] may yield conclusions that may be unexpected, but reliable, and . . . based on a distinctive methodology worked out especially for our problem. And the point of departure of such a study would be the ideas that S. V. Kalesnik formulated about . . . the "clear-cut separation of society and the geographic environment. Gumilev admits, however, that these ideas have been criticized by Yu G. Saushkin in a manner that renders it both tactless and inadvisable to ignore this controversy which "introduces clarity into this problem." The issues raised by Saushkin follow an extreme positivist line and take a social determinist position regarding human agency in changing landscape. His three major points are: (1) that "a new, renewable geographic environment" will arise in the future and
"will be to a large extent synthetic, artificial"; (2) that through irrigation, crop raising and grazing, human agency is responsible for changing desert and steppe landscapes; and (3) that Kalesnik has wrongly posed the question of man in nature, "meaning the geographic environment," as "either or, while ... it should be both and." As it suits his purpose in preparing a platform on which to place his proposed method, Gumilev (1968b:36) takes up the task of rebutting Saushkin's criticisms of Kalesnik, as briefly follows:

(1) references to the unknown future should not be used as an argument in a scholarly controversy ... (2) dealing with the interplay between man and nature must draw to a large extent on historical geography, which constitutes an independent discipline on the boundary between two independent sciences: history and geography ... [as] man's influence over the landscape has not always been beneficial ... [as it] depends on the character rather that the level of culture ... (3) the question of whether people are part of nature ... should be either-or, [rather than] both-and ... [as] the division of sciences is arbitrary, but that is precisely why it is constructive.

Here, I part ways with both Kalesnik's and Gumilev's "either-or" distinction and maintenance of a division that seems unnecessary to the purpose of man-nature relationships. Chalking it up to ideological posturing within the discourse and politics of Soviet academia, we can move on beyond Kalesnik and Saushkin's débâcle. Furthermore, Gumilev would rather pose the question of "how people enter nature," instead of Anuchin's question:

what aspect of mankind is joined with nature and the surrounding geographical environment and what aspects of society are the product of its own development (1968b:36).

Now rephrased, Gumilev (1968b:39) finds that the question can be answered, not through an integration of sciences, but by the far simpler and more graceful method of separating a special discipline that would be concerned with this problem. [He proceeds] to show what the specific characteristics and methods of such a discipline should be.

First, Gumilev notes that "even in a stable landscape and under a stable economic system there will be changes in social relationships, when the situation surrounding a given country changes." Here he gives examples of changes
in the Greek landscape under successive social systems, from ancient times through Macedonian and Roman rule. And yet,
as soon as the natural economy was replaced by a commercial economy, ... Greece entered into the maelstrom of the world historical process. She was left to her own resources, but her relations with other peoples changed, and the country developed while the goats continued grazing on the green grass as in antiquity and the olive trees bore fruit as in the days of Homer (1968b:40).

Using this juncture to insert a rationale for ethnos as the indicator of change in the landscapes under discussion, Gumilev (1968b:40) concludes

There is no doubt that every individual of the species Homo sapiens is part of a certain social group, but in addition that very same individual is also a member of a group of another order, namely an "ethnos" or ethnic community. Just as there never was, and probably never will be, a man who did not belong to a certain stage of social development and who was not a member of a political formation ... so there is no man who does not belong to some ethnic community.

Having advanced another major premise in constructing his theory of human agency as a factor of landscape change, Gumilev now finds that ethnos is the active force in that process and, acting as an indicator, its analogous relationship between social, political, and ethnic communities may be compared to measures of length, weight, and temperature ... [and as such] are parallel, but not commensurable phenomena. It is [thus] obvious that the social pattern of development, from a lower to a higher social formation, has no relation to geography (1968b: 40).

Such a division of function between the two concepts of social and natural phenomena may be of heuristic value even if a counter argument for their integration is equally valid. That is, human artifice in social action and technical agency is but an aspect of human nature arising out of the natural processes by which the species Homo sapiens constructs its behavioral patterns.

The very social attributes of political organization and techno-economic activity already pointed to by Gumilev and Vernadskiy as despoiling the environment may be, in fact, no more than how a biologically hard wired primate fouls his nest, contests territory for food and mating and establishes hierarchy.
That human consciousness can actualize a rational world where social and artificial control regulates nature in an ecologically harmonious manner remains a proposition I cannot accept as anything more than a remote possibility. Again, that very "regulation" may be no more than an assertion of dominance biologically encoded within the species. Nevertheless, Gumilev's premise of a common inheritance of ethnic community parallel to social formations, contradicts both Soviet and American "melting pot" ideologies with their socially constructed mythic realities of mass cultures of collectively socialized individuals. Can we, however, sustain a primordialist position which characterizes ethnos as a biosocial substrate underlying all cultural behavior. Why not, as Gumilev only asks us to view ethnos as geographic, and hence a natural phenomenon and not as providing the motivating factors for individual human action. That motivity would best be attributed to other causes, in particular "Geltung" as discussed by P. L. Wagner (1987) and connected here by the concept of "relevance" presented by Sperber and Wilson (1986). According to Gumilev, we should not try, "to find geographical factors behind the acts of generals, reformers and diplomats." Conversely, as Gumilev (1968b:40) puts it,

ethnic communities ... fully meet the conditions that apply to our problem [how people enter into nature]. The interplay between ethnic man and nature can be traced clearly not only in the early stages of development, but all the way to the beginning of the 20th century.

Here, we find a further clarification of ethnos as an indicator of post-glacial historical geography, i.e., it is limited on both ends of the time scale. While following Gumilev's hypothesis and his empirically generalized correlations to historical references, I question whether it is impossible to establish either later chronological boundaries for analysis or earlier boundaries, going back to the interglacial stages, because we know from the theory of historical criticism that this results in aberrations of proximity and of remoteness rendering the investigator's conclusions unreliable (1968b:40).
Gumilev does not undertake to test his hypothesis on current situations, leaving that task for others. In assessing the argument and data throughout his texts, my research partly takes up that challenge as it refers to current empirical and theoretical research findings in geography, anthropology, human ecology, archaeology, ethology, and materials from other disciplines to which Gumilev may not have had access, or does not wish to invoke.

In terms of the three lines of development (social, political and ethnogenetic), Gumilev argues from a comparison of Britain and France that each country can be seen to conform to both general and unique patterns of all three separate lines of development. If we follow his analogy and first compare the social plane to the measure of length, then we can see paths of social development occurring over an extended time (longue durée). They do not, however, necessarily fall into the stages proposed by historical and dialectical materialism, or in its "spiral of progress." This is a point in which Gumilev cannot prudently depart from official doctrine, and which we must address in a more flexible view. Not only do different social formations go through social development on their own time scale, they also do not necessarily all confront the same stages of development. A society may not exhibit a "feudal" or a capitalist stage in its social evolution, nor is the irreversibility of social processes fully proven. While no society may return to a previous stage, one may undergo transformations that create such a stage as a neo-feudalism. This latter, I would propose, could well fit the next stage of social evolution in the developed world of transnational corporations. This point of Gumilev's becomes moot outside of an orthodox Marxist framework.

Much of the language used throughout Gumilev's more theoretical arguments, in fact, relies on the maintenance of fixed "marxist" categories, as untenable as other orthodoxies within a free expression of ideas.
constructing the contemporary social and natural sciences. Granted that we do need standardized categories, but it seems unlikely that any discipline could succumb to an objective assessment of the ideological values which constrain its scientific operations. To overcome its broad idiosyncracies and become subject to result of a study producing such a standardized set of labels for widely ranging concepts and material data any discipline would have to exceed present social attitudes prevalent among scholars acting like any other people in their society. Nevertheless, Gumilev identifies his examples of Britain and France as passing through a certain pattern of stages of development "established by historical materialism and [as such] does not require revision."

We turn now to the second line of development, irrespective of whether the "political plane" is analogous to "weight," or the comparison stands only as a loose metaphor. In any case, as Gumilev argues from the data presented, there is no Newtonian equality in the political construction of state enterprises, shifting boundaries, and regimes. To support this argument he cites the following examples of successions in political rule, beginning with the last centuries B. C. . . [when] the theocratic rule of the Druids, which cemented both countries [Britain and France], broken up into a large number of clans. From the 1st to the 3rd century -- Roman rule in Gaul and an independent Britain. From the 3rd to 5th century Roman rule extends to the Tweed, and England is separated from Scotland. During the great migrations under the Merovingians, both countries are broken up politically under the early feudal kings Charlemagne and Alfred. Then Normandy is combined with England, and later with Poitou, Aquitania, and Auvergne in the kingdom of Henry II of the Plantagenets. This was a strange territorial combination from a geographical point of view, but it lasted until the end of the Hundred Years' War, or about 300 years . . . Finally, in the 16th-17th centuries the Britain and France familiar to us began to take shape, with Britain, including agricultural Kent, settled by Anglo-Saxons, and stockraising Scotland, Wales and Northumberland, settled by Celts and Scandinavians, the descendents of the Vikings, while France was made up of Provence, Brittany, and Gascony, each inhabited by peoples who spoke their own language and had their own way of life and economic system (1968b:41).

Regardless of whether this broadly generalized sweep of history is accurate at
to approach a geographical region and its landscape as a vessel containing certain natural factors which affect settlers and are in turn modified by the sequential occupants. As he has attempted to demonstrate, the political plane of organization and activity may not at all coincide with geographical conditions, landscapes or even social formations. The latter, however, may not coincide either with political or ethnic stages, but according to the Marxist frame of reference, provide a baseline chronology for those other developments. Changes in political formations, i.e. states, although following the historical stages of social formation, may not, as Gumilev argues, be directly caused by physical geography. It is entirely possible, however, that the timing and configuration of political activities which effect change in structure may be effected by the landscape, or bio-physical envelope within which they operate.

Having rejected, "as fruitless," attempts to "find explanation for these [political] changes in physical geography," Gumilev finds an obvious relation between landscapes and their economy, and thus "can draw upon economic geography [as], in fact, historians have long been doing." Here, he finds that in 16th-17th century France and Britain, what the political formations, in this particular case, states, needed for stability and prosperity was not a uniform, but a diversified economy in which various economic provinces supplemented one another. Economic relations led to a lively trade, but the populations of these countries did not merge. Why? This brings us to the ethnic aspect (1968b:41).

But before arriving at ethnogenesis, as the crucial third line of development, Gumilev introduces ethnicity into the political domain. Here we find an operational approach to landscape as Gumilev argues that each landscape forces its inhabitants to adapt, and this gives rise to a community that often coincides with the ethnic... [and presents data on] three landscape zones: subtropical in southern France, forested in northern France and southern England, and subboreal in the heaths of Scotland and Northumberland (19678b:41).
In the first significant operationalizing of his definition of historical geography, Gumilev has proposed that the landscape forces its inhabiting population into a unique set of economic behaviors which may or may not be indicated by a corresponding ethnos. It follows from this proposal that he must demonstrate examples of such occurrences, if the formation of new socio-ethnic amalgamations, as well as their fragmentation, are due to environmental conditions. Citing an example of "the lower reaches of the Rhone," he views a sequence of inhabitant populations as having a common character of life, determined by the common character of labor. . . [First], the Celts . . . gathered grapes, the Roman colonists (1st to 4th centuries), the militant Burgundians (5th century), the Arabs (7th century), and the Catalonians (11th century did the same, . . . [But] the 12th century witnessed the formation of a single people out of the now separate Catalonians, Provencals, and Ligurians. It took the devastating Albigensian war to break up this unity, but as late as the 19th century the inhabitants of southern France spoke Provencal; they did not know French and considered themselves separate from the French (1968b:41).

From this example, however brief or correct it may be, we can again see the gist of his argument from the perspective of how a single landscape affects its inhabitants. But from the other side of the coin, we can view a single ethnos as being modified by different environments, for example,

The Norse fishermen who settled in Normandy turned into French peasants within two generations, retaining only their distinctive [physical] anthropological type. The same Norsemen in the Tweed valley became shepherders of the Scottish lowlands, but did not penetrate into the mountains of northern Scotland, where the Celtic highlanders retained their clan system (1968b:41).

From these two sets of examples, Gumilev (1968b:41) concludes that "the landscape, including its landforms, turned out to be a decisive factor not for political or economic boundaries, but for ethnic boundaries."

Turning to the landscape of northern France, "her core area," Gumilev finds that this natural region formed a crucible which, through a form of convergent development, amalgamated a vast number of peoples coming from the east and the southwest, Belgians, Aquita-
nians, and Celts in antiquity, Latins and Germans at the beginning of
the Christian era, Franks, Burgundians, Alans, and Bretons in the
early Middle Ages, English, Italian, Spanish, and Dutch immigrants
of the Reformation. All merged into the homogenous mass of French
peasants that has been brilliantly described not so much by ethnogra-
phers, as by Balzac, Zola, and other realistic writers. I. G. Ehren-
burg, through the mouth of his hero, a French schoolteacher, has
said, "These are not people, they are grasses," thus unconsciously
formulating the influence of the landscape over the ethnic community
on the level of physical geography (1968b:41-42).

Despite a strongly metaphorical argument and use of highly qualitative evidence
to support it, Gumilev concludes from the literary evidence that

From this point of view, Paris should be regarded as a man-made
landscape element within the forest landscape zone with an accele-
rated rhythm of development because the present appearance of this
microregion differs both from the medieval domain of the Capetians
and from Roman Lutecia. But an undrained lake, by becoming increas-
ingly shallow, is soon turned into a swamp although the surrounding
forest does not change. On a plane of pure natural science, there is
thus no basic difference between man-made and water-made elements of
the landscape (1968b:42).

He makes his point here, although continuing to resort to metaphor in claiming
a relationship between landscape factors resulting from human agency and those
of other "natural" cause.

In addressing the third line of development, ethnogenesis, Gumilev
states that correlation between natural and ethnic boundaries is a fact that
can be observed, but not universally, thus giving rise to the problem of
standard criteria for ethnogenesis. Admitting that the problem of ethnogenesis
is quite complicated, Gumilev compares the two cases (France and England)
within a larger context. But first, he focuses on the character of immigra-
tion, examining the problem raised by the fact that

the tribes that settled in France were so different in language,
customs, and traditions when they arrived in the territory between
the Rhine and the Bay of Biscay that Augustin Thierry, the French
historian, suggested a tribal concept to explain [the convergence
leading to] the formation of modern France (1968b:42).

But a second historian, Fustel de Coulanges, focused on a different aspect to
explain the formation of modern France. His perspective concentrating on "the effect to the landscape," de Coulanges "detected features of Roman institutions in the French peasant." Gumilev takes a "both-and" position here, presenting a synthetic view, in which

both the character of migrations as a whole and the degree of adaptation should be viewed as phenomena related to geographic science, namely to the branch of geography known as ethnology, because these phenomena represent the interplay between mankind and the geographic environment and the resulting mutual influences (1968b:42).

Following from his earlier line of reasoning, however, he concludes that

We can thus regard the ethnic environment as an indicator of changes in natural conditions, an indicator that is moreover, so sensitive that with a proper approach, it is quite legitimate and feasible to derive paleogeographic conclusions from such material (1968b:42).

Therefore, if an ethnos is the indicator of a landscape, its particular segment of the ethnosphere would indicate changes of natural conditions within both the landscape and its encompassing biosphere.

Finally, in summing up the synthetic view, Gumilev states that

In adapting itself to the conditions of a certain landscape, a resettled or migrating ethnic community will seek out an area that fulfills its economic habits and requirements. [For example] the Ugrians settled in the forest, the Turks and the Mongols in the steppe and the banks of streams; the English colonized lands with a temperate climate, and the Arabs and Spaniards sought out a hot climate. There are exceptions to the rule, but only within the limits of a legitimate margin of error, the character of the culture of an ethnic is determined by the landscape through its economic potential . . . [as] in adapting itself to the conditions of a certain landscape, a resettled or migrating ethnic community will seek out an area that fulfills its economic habits and requirements (1968b:42).

One might wish that all such transfers of population and transformations of new landscapes could be so easily explained. But has this simplification of human migratory and habitat preferences, a generalization that has been made many times before, not been reduced to the point whereby it has lost any explanatory power at other levels of analysis. Assuming, however, that such an adaptation factor does predominate, and supports the contention that certain landscapes
are encoded in the cognitive or subconscious collectivity of an ethnos, how
does it, for example, account for the rapid and differing changes in lifestyle
proposed by Gumilev for the Norse fisherman in Normandy and Tweed. Gumilev now
takes up this problem from another tack.

Approaching the problem of what conditions are necessary for ethnogenesis to occur, Gumilev finds the one essential condition to be "a combination of two or more landscapes." But if these complementary landscapes are not found situated adjacent to each other, they must able to meet further criteria. In the case just prior, Britain and France, Gumilev claims that they represent a rare combination of micro-landscape regions. As a result ethnogenesis was a frequent phenomenon in Europe, giving rise to the aberration that the creation of new peoples was commonplace. Actually such favorable geographic conditions are rather the exception although they do occur elsewhere in the world (1968b:43).

To identify these special areas of the biosphere where such conditions occur, Gumilev uses the Russian term mestorazvitiye (literally "place development") and rendered in Shabad's translation as "genotype, a place where an ethnic community is generated." According to Gumilev's (1968b:43) citation of Savitskiy (1927:30), the term has "been suggested for physical-geographic regions marked by processes of ethnogenesis and by an intensive historical development." As neither genotype, "place" nor "landscape" quite work as a descriptive term due to their other denotations, I will translate "mestorazvitiye" as an "ethnogenic region." Place, for example, usually refers to a small area within a landscape, which in turn, either refers to the visible surround (in its common North American use) or to a physical area and its attributes as defined by Kalesnik and adopted by Gumilev (cf. p.194). Because a number of landscapes, in this latter sense, may be clustered within a larger area, and each one may or may not present ethnogenic conditions at any given time, it is better to discuss that area as a region. Assuming that these conditions exist
within the biosphere as understood by Vernadskiy and Gumilev, then we are implicitly talking about a "bioregion," (cf. Berg and Dasmann, 1980). A bioregion, however, represents a unique type, in that some, or a greater proportion, of its constituting landscapes contain elements capable of creating the conditions for ethnogenesis. Hence, we have an "ethnogenic bioregion," for convenience, shortened to "ethnogenic region."

Testing this thesis of ethnogenic regions Gumilev presents materials from a few selected areas of the world where the right ensembles of environmental conditions exist for ethnogeny to occur. As this involves a global survey, I will abridge the description of each area and supporting generalized data.

Beginning with Central Asia, Gumilev finds that ethnogenesis proceeded so slowly that it was virtually unnoticeable (beyond the limits of the permitted tolerance). This is explained by the fact that a sharp boundary was lacking between steppe and oases; they were separated by the desert zone, easily crossed from both sides by pillagers, but not suited for life. We have already noted that the peoples of the steppe, even if highly prosperous, displayed an extremely low potential for development . . . [and] were highly stable both on an ethnic and on a social plane (1968b:43).

Second, The Levant of Near East, represents a combination of sea, mountains, desert, and river valleys. There ethnic communities arose frequently, except for the highlands of Transcaucasia, where natural conditions favored isolates. Such an isolate are the Kurds, who maintained their ethnic distinctiveness against the Persians . . . Greeks . . . Romans . . . Arabs, and even against the Ottoman Turks. We thus have an exception that confirms the rule (1968b:43).

Third, the Indian subcontinent, in contrast to Europe, it is poor in landscape diversity. The landscapes of the Deccan are typologically similar and processes of ethnogenesis . . . were not very evident in historical times. In northwest India, on the other hand, two great peoples arose: the Rajputs, about the 8th century, and Sikhs, in the 16th-17th centuries . . . the key factor was the combination of desert and tropical vegetation of the Indus valley and, although cultural development was greater in the interior . . . the formation of new peoples was associated with the frontier region.
The processes of ethnogenesis were similarly rather intensive in the basin of the lower Narbada River, where the jungles of northern India adjoin the grassy plains of the Deccan Maharashtra. This gave rise . . . in the 17th century to the Maratha people . . . [whose] country represented a combination of three physical-geographic regions: the coastal belt between the Western Ghats and the sea, the mountains to the east of the Ghats, and a chernozem valley bounded by ranges of hills. There are grounds for assigning this complex to the category called "genotype" [sic. ethnogenic region] even though a region like Bengal displayed a far higher level of culture (1968b:44).

Turning to the New World, Gumilev finds that in North America,

vast forests and prairies did not favor ethnogenesis. But even there we find areas in which American Indian tribes combined into larger communities. For example, the Iroquois confederacy . . . arose along the indented shoreline of the Great Lakes in the 15th century. . . . On the Pacific coast south of Alaska, where rocky islands serve as rookeries for sea lions and seals, and the sea feeds the local population . . . The Rocky Mountains rise for the most part abruptly out of the prairies, so that the mountain landscape does not really combine with the steppe. However, in New Mexico, where the landscape transition is more gradual, the Pueblo culture arose in antiquity, and the 12th century saw the formation of the Nahuatl group, combining the Apache, Navaho, and Aztecs (1968b:44)

In South America, Gumilev also finds that

the pattern is even more clearly seen . . . The highlands of the Andes, with their combination of mountain and steppe landscapes, retain evidence of cultures created by many peoples in various periods, while the forests of Brazil and the plains of Argentina . . . did not give rise, and, as we have shown, could not possibly have given rise to to any great cultures in view of their natural uniformity, which, incidentally, does not prevent and never has prevented peoples who arose elsewhere from exploiting the resources of such uniform environments (1968b:44).

Passing over Africa and Australia, in which Gumilev claims to have "observed the same pattern," he focuses instead on the "distinctive characteristics of peoples associated with the sea." Here, he states that

The sea may play a dual role depending on the character of the shoreline and the level of civilization of the coastal inhabitants. The sea is a limiting element in the landscape when it is undeveloped and impassable. . . . [Also], when man began to derive nourishment from the sea and learned how to navigate, the sea became a constituent element of the genotype [sic. ethnogenic region]. . . By the 19th century almost all seas and oceans had become part of the ecumene, but it must be borne in mind that this was not true of all eras.
Throughout the historical period we can distinguish two ethnocultural areas where the sea forms an integral part of the genotype -- the circumpolar cultures on the shores of the Arctic Sea, and Polynesia. [First], the Polynesian culture accommodated ... a wide diversity of ethnic formations that were in conflict and created their own cultures. [Second, for] the circumpolar peoples ... there was a time when a chain of related cultures circled the Arctic Ocean, which served as the source of nourishment. ... The movement of peoples from south to north was one-sided and irreversible because they descended the streams on rafts and were unable to return upstream against the current.

The most recent circumpolar peoples are the Eskimos, who arrived about the 6th century ... and in the 10th century drove the Indians to the southern border of Canada and threw the Vikings in Greenland back into the sea. Here again we find a combination of landscapes: the nourishing sea and the wooded tundra. Based on the sketchy description of regions and their ethnogenic characteristics, or lack thereof, which Gumilev identifies as "the foregoing analysis," he now forms the following conclusion. Here, two points may be discovered: first,

a homogeneous landscape tends to stabilize the ethnic communities that inhabit it; [while] a heterogenous landscape tends to stimulate changes leading to the formation of new ethnic communities (1968b:45).

Second, Gumilev asks whether "a landscape combination serves as the cause of ethnogenesis, or merely as a favorable condition," for its occurrence. To which he replies, that the latter is the case, because,

if the cause were to be found in geographic conditions, these being constantly active, would also constantly reproduce new ethnic communities, and we know that this is not so. Consequently ethnogenesis, though favored by geographic conditions, must result from other causes, and these must be sought in other disciplines, sociology and anthropology, which not even V.A. Anuchin suggests should be joined to a unified geography (1968b:45).

Again, we note that Soviet academic categories differ from a North American tradition in which anthropology and cultural geography may constitute a relatively indivisible whole. While these heuristic divisions are important to Gumilev in formulating his methodology, we must override them in assessing the operational value of that set of propositions. The Gumilev-Anuchin argu-
ment over such categories may, therefore, seem a non sequitur, but it "goes with the territory" and should not detract from a reading of the operational utility in Gumilev's system of ethnology, or ethnogeography, which at this point, requires the following processes:

1. formulation of a special methodology;
2. analysis of the problems of stability and variability of ethnic communities;
3. analysis of the general principles of ethnogenesis;
4. analysis of the mechanisms of physical-geographic and biological influences on ethnic communities; and, above all,
5. a definition of the concept of ethnos (1968b:46).

Gumilev recognizes that these aspects of method proposed here as solutions to the problem of man-nature relationships

may turn out to be controversial and to require corrections and refinement, but the advantage of our approach lies in the fact that it does not require an overhaul of the existing classification of the sciences, which still seems to yield outstanding results (1968b:46).

In contrast to Anuchin's proposed changes, Gumilev further states that

If we were to adopt the course of an integration of the sciences, then according to the principles of the dialectic (the laws of the negation of the negation) the next state of development would be disintegration, i.e., confusion and chaos, which certainly would not be desirable (1968b:46).

But, according to Gumilev, a "number of special studies" using the simplified approach he proposed, and covering the above aspects of the thesis, are being "conducted at the Geographical Society USSR through the interpretation of accumulated, but as not yet systematized data." They must, however, also be interpreted from the perspective of a North American disciplinary matrix, which necessitates a continual "reading" of further analysis from that Soviet data, combined with a reflexive, or self-critical assessment and comparison.

In making his final conclusion, Gumilev demonstrates a respect for Anuchin, despite various points of sharp disagreement, as the fact that

V. A. Anuchin posed the problem in a new way and that he provoked a discussion touching on such a vast range of theoretical and practical
problems in itself suggests that Soviet geography still has tremendous creative strength. [Thus] if a discussion of such scope were possible in philology, archeology, the study of source materials and in bibliography, we could not wish for anything more. Those disciplines, too, deal with problems that require review. A scholar who comes to geography from any of the adjoining disciplines finds such broad prospects opening up before him that the pessimism of V. A. Anuchi

in and Yu. g. Saushkin does not seem justified (1968b:46).

Perhaps this final comment is a bit autobiographical, as Gumilev displays his excitement in moving from the streams of orientalism and archaeology to the wide sea of geography. Then too, my own experience confirms the attraction of this vast ocean of knowledge approachable and navigable on the geographic ship. The next chapter, however, returns to the issue of human agency in landscape change, or as it is entitled, "The anthropogenic factor in landscape formation." Here, Gumilev refers not so much to the evolution of the species Homo sapiens, i.e., "anthropogenesis," but to a reciprocity between human factors affecting the landscape which in turn contributes to forming the lifeways of the species. In the article, Gumilev explores systems of biosocial causation in human agency, and criticizes, in particular, the discrepancies in Toynbee's model of civilization. He then poses an alternative classification based on the concept of ethnogenic regions.
CHAPTER X
ON THE ANTHROPOGENIC FACTOR IN LANDSCAPE FORMATION

In the previous chapter we looked at the particular way in which Gumilev addressed the principal question in Soviet geography, i.e., how people enter into a relationship with nature, and how he introduced into the academic discourse a method which would both answer and replace it. Situating that method in the methodological discussion prevailing within Soviet academic geography, Gumilev pushes further into the question of human agency and its effect on landscape change. But, while having suggested that landscape takes the leading role in conditioning the human agency which affects it, he criticizes more deterministic approaches, and in particular, A. Toynbee's causative explanation of "challenge and response." He continues to stress the importance of ethnogenesis as an indicator in landscape change while, by implication, extending his critique of "unified" geography. At least three issues, however, underlie this argument: (1) a critique of other general theories of history, notably Toynbee's; (2) a classification of anthropogenic factors in landscape formation; and (3) the introduction of an as yet undefined energetic "jolt" as the triggering mechanism in ethnogenesis.

Because "the significance of human activity in the formation of Late Holocene landscapes" represents an acute problem to Gumilev, he suggests another line of approach, one following Kalesnik's (1965) comment that
almost no landscapes remain on earth at the present time that have not been affected by human activity . . . [yet there have been] differences in the purpose, extent, and character of man's influence on his natural environment (1965:410, 424-25).

Now focusing even more precisely on the problem, Gumilev states:

The point is not the magnitude of the changes introduced by man, or whether they were beneficial or destructive in their consequences, but rather when, how, and why those changes took place. There is no doubt that landscape and landforms in [e.g.] industrial districts . . . have been changed to a greater extent than in the steppe . . . but if we try to explain this in terms of social evolution, we are confronted with insuperable difficulties (1972:590).

To demonstrate the non-synchronous relationship between the impact of human agency on landscape change and on social development, Gumilev gives a number of historical examples from different periods and locations. But in discussing these examples, the relevance of Marxist sequential categories of social formations, i.e., tribal, class, etc., must be questioned in the light of Gumilev's emphasis on similar levels of impact irrespective of different socio-technical levels. First, he cites the impacts of "the land tilling culture of the Mayas in Yucatan," which, beginning in the 5th century, "under the tribal system," has not changed its direction of decline even "when class relationships began to take shape . . . [and] despite the introduction of European technology." Likewise, he states that Egypt's economy declined gradually, but steadily in the period of feudalism, while Europe under the same social relationships experienced an unprecedented upsurge of agriculture and crafts, not to mention trade. In the present context this meant that the landscape of Egypt remained stable during that period, while that of Europe changed radically (1972:590).

As we can see, he emphasizes that similar social formations do not produce similar results in different places, as a "vulgar" Marxist orthodoxy would have it. He gives several other examples which provide the same results, and consequently void the idea that similar social formations can be causative factors in landscape change. Sheep rearing, for example, whether in 18th century
England or 13th to 19th century Mongolia, caused negative impacts on both landscapes and peoples. In the first case by throwing yeomanry off the land and into cities, in the second by destroying the habitat for wild animals, for Wildlife thus declined and the hunting tribes were deprived of their customary food, became weaker, fell under the dominance of the steppe herders, and disappeared from the ethnographic map of Asia (1972:591).

Gumilev finds an analogy between both extensive sheep and goats herding in causing severe impacts on landscapes, as for example, the islands of The Azores [sic! sc. Canaries] were turned into bare rocks not by the Spanish feudal lords, but by goats . . . introduced by the Asturians and the Basques . . . living under the tribal system (1972:591).

One factor here is that in cases of relocation diffusion, Europeans or other settlers could displace indigenous peoples and change both the social formation and level of impacts on landscapes. Nevertheless, Gumilev rejects social formation as a primary causative factor and seeks an answer at another level.

In searching for the appropriate level and terms for "classifying phenomena that have to do with the man-nature relationship," Gumilev turns to Yu. K. Yefremov's criticism of Vernadskiy's term "noosphere." Because of the fact that our species is responsible for the "rapacious ravaging of natural resources, or the disfiguration of landscape by wars," Yefremov rejects attributing such activity "to the realm of the mind (noos)," suggesting instead a new term, the "sociosphere." Gumilev cites Yefremov's (1966) definition:

the sociosphere consists of the sphere of cultural landscape and mankind itself, and the mass of living matter organized into human organisms constitutes the anthroposphere (1966:49-53)

From this definition, Gumilev concludes that, "the relationship between the anthroposphere and the environment are the the subject of the ecology of man."

But, having established that link between human agency and the environment as the "sociosphere," which in turn, incorporates the "anthroposphere," Gumilev also makes a point of including Yefremov's crucial description of "his concept
of the place of mankind in nature as biosocial." According to Gumilev's opinion, which I strongly share, "this concept is far more subtle and sophisticated than a unified geography." But as Gumilev also points out,

not any combination of sciences is necessarily fruitful, and [thus] Yefremov's proposed combination of biology and sociology requires further definition and supplementation along two lines (1972:591).

But before discussing those two lines, we might just note the importance attached by Gumilev to precisely locating particular types and occurrences of landscape change; already seen in his attempt to focus the questions of general causation on more localized situations. This was demonstrated in the previous chapter when landscape was discussed as only one factor in ethnogenesis, not its cause. The question of cause is now being brought forward as part of the implementing of the project outlined earlier, dealing with the issues of method, general principles and physio-biotic mechanisms of ethnogenesis.

As his method of identifying ethnogenic influences necessitates a classification scheme for man-nature relationships, Gumilev appropriates Yefremov's scheme and can now define an arena for human ecology within a disciplinary matrix of historical geography. This concept of the "biosocial" accords with similar concepts making their way into the discourse of North American geography, primarily from anthropology as the "hearth" for the development of sociobiology and related concepts. The biosocial nature of ethnos can be seen in ritual performance systems through which a recognition of difference occurs. Nevertheless, as Gumilev noted, some clarification is needed as to how these two disciplinary lines converge. The first point deals with social laws, and the second with an ambiguity in the term "anthroposphere."

Gumilev initiates a clarification and modification of the two concepts (sociosphere and anthroposphere) by referring to the "social laws" derived from historical materialism. If, as Gumilev, we assume that these social laws
are not all-encompassing, and that ethnic behavior and human agency in landscape change are natural phenomena, then we may share his assumption of the following co-relationship. That is, if

social evolution has been a spontaneous development along a spiral. [Then], precisely because this has been a self-development, it cannot be viewed as a function of exogenous factors, and one can speak only of an interplay of two independent lines of development: the social and the natural (1973c:593).

Having relegated the social factors to a less than dominant role, Gumilev opened his concepts up to criticism from social determinists (as we shall see from his arguments), but in so doing, brought "the social" into dialogue with "the natural" as integrated through "the sociosphere."

In regard to the second line of questioning on the "natural" realm of human behavior, Gumilev (1972:592) finds the anthroposphere "too amorphous a concept," and sets out to redefine what is meant by "the mass of living matter organized into human organisms." First, he states that, unlike other mammal species with "strictly defined habitats," mankind has no fixed habitats, but rather, a unique "capacity to adapt" that has enabled the species to "settle the entire land surface of the earth." On this basis he concludes that the species has "no single environment and therefore no common ecology." Arguing from within a Marxist framework, Gumilev raises a second problem with social determinism, in that "it would be a mistake to assume that, say, all slaveholding . . . or feudal societies interact similarly with the natural environment." Having already established that fact in his previous examples, Gumilev (1972:592) concludes, therefore, that

Whether a society belongs to a particular social formation depends on the mode of production and not on the character of adaptation to the landscape. The man-nature relationship is constant, but it is realized through groups of another order, namely ethnic groups.

Gumilev has now taken a crucial step in proposing that ethnosc, as the principal
mode of human organization interacting directly with nature, takes precedence over the social factors of human organization in determining "the character of adaptation" to any particular landscape.

Further refining the concept of ethnos, Gumilev proposes that each unique ethnus "establishes its distinctive relationship with the geographical environment and the landscape sphere of its habitat." An ethnus thus pursues a dual track of development: "it participates in the progressive social development of mankind," while continuing to "maintain contact with nature." However, "progressive development" may be too rigid a term whereas a less positivist concept, say, "evolution" or "transformation," fits a more ecological viewpoint. Also, the phrase "contact with nature" does not seem a strong enough description of the continual interaction of "man-in-nature." Nevertheless, Gumilev has introduced an important recognition of ethnicity as the nexus where human agency, social development and the natural environment all converge in a particular landscape. Moreover, he concludes that

the range of ethnic variation ... is so great that an ethnic corrective must be introduced into the ecology of man. Without it, the analysis would not be fruitful. And since this is so, we have established the existence of an independent landscape-forming phenomenon that has not been taken into account thus far. Our task [therefore] is to show that the problem of the man-nature relationship cannot be solved without consideration of that phenomenon (1972:594).

Gumilev has rightly insisted on the introduction of ethnus as a variable in the landscape-forming process, and sees his task as demonstrating that it must be considered in any assessment of the man-nature relationship.

Regarding other attempts to construct a model of mankind as a natural and social phenomenon, Gumilev (1972:592) singles out Toynbee's system for criticism while dismissing earlier biosocial theories, including:

Friedrich Ratzel's theory of culture rings, Herbert Spencer's biological sociologism, which likens society to an organism, and finally
Ellsworth Huntington's paradoxical conclusions about the direct influence of meteorological factors on the course of historical events.

But taking on a more contemporary example, Gumilev cites Toynbee's approach as the newest and most widespread concept, constructed on the basis of the fullest possible use of historical and geographical material... [and] an attempt to combine social and geographical laws (1972:592).

Describing Toynbee's system, Gumilev finds that he "establishes the presence of wholes" in order to classify peoples of the oecumene. Toynbee calls these holistic orders, "societies" or "civilizations," of which he found "21 occupying 16 regions. Furthermore, according to Gumilev's reading of Toynbee, civilizations were divided into three secondary categories: "affiliated," where two or more "arose successively in a particular region;" "abortive," and "arrested." Moreover, all other societies which did not develop to the level of civilization are classified by Toynbee as "primitive societies." Gumilev presents Toynbee's viewpoint as one in which development takes place through mimesis, or imitation, which is an inherent characteristic of all social life. Within civilizations, the masses imitate creative personalities, producing changes in social life and a growth of culture, and in primitive societies, mimesis takes the form of imitation of elders or ancestors, which tends to make these societies static. Such were all societies of remote antiquity, until the beginnings of civilization (1972:593).

Furthermore, in Gumilev's reading, Toynbee views the main problem in history as seeking out "the factor that causes human societies to pass from a static to a dynamic condition." And as Gumilev views Toynbee's approach to identifying this factor, he finds Toynbee rejecting "racism and the influence of beneficial geographic conditions," in favor of "responding to challenge," as the main mechanism for achieving this human social adaptation. Here he quotes Toynbee (1960) directly as stating,

Man achieves civilization not as a result of superior biological endowment or geographic environment but as a response to a challenge in a situation of special difficulty that rouses him to make a hitherto unprecedented effort (1960:570; cited in Gumilev, 1972:593).
This concept of response to challenge is also rejected by Gumilev as the primary factor influencing human agency in landscape change. Gumilev dismisses the notion that talent is stimulated by response to adversity according to three categories of challenges: environmental, foreign invasions, and disintegration of previous civilizations.

Gumilev takes issue with the examples presented by Toynbee for all three categories of challenge. Where Toynbee sees "cold and forests as unfavorable natural conditions," Gumilev finds that although they might intimidate the Englishman, "neither actually bothers the Russians." Where Toynbee finds foreign invasions or disintegrating of preceding civilizations stimulating the development of new civilizations, Gumilev finds little in this to agree with. First, he flatly rejects both Toynbee's categories of regions and number of civilizations, and provides alternative examples. Second, Gumilev argues that, converse to Toynbee's claim, "many small underdeveloped peoples" were able to assimilate material and cultural artifacts of value, yet still not develop. Therefore the problem lay not in a lack of "mimisis" (mimetic ability), but rather in other conditions, usually geographical. Third, Toynbee's view regarding geniuses and heroes appearing only in the face of adversity is found by Gumilev to have no more logical power than racism as a factor which they both reject. Regarding man-nature relationship, Gumilev finds that Toynbee's approach confuses rather than clarifies the issue, and states:

His [Toynbee's] thesis that hard nature stimulated man to activity is, on one hand, simply geographical determinism, and on the other hand, simply not true because then the centre of, say, Russian civilization would have had to be, if not in the Taymyr, where conditions are hard, at least in the steppe or forest east of the Volga rather than around Kiev. Furthermore, if the sea that bounded Greece or Scandinavia represented a challenge, why did the Greeks respond only in the 8th to 5th centuries B.C. and the Scandinavians in the 9th to 13th centuries A.D.? And all the rest of the time, instead of the victorious Hellenes or the formidable Vikings, we had simple
fishermen of sponge or herring. Evidently, there is more to it than simply the presence of the sea (1972:594).

Finally, regarding the issue of transformation of nature, Gumilev finds that although Toynbee's concept represents a "full-fledged socio-geographic system, backed by historical material . . . something is missing in the system."

Countering one of Toynbee's examples, he raises the following question: if the Sumerians and the Accadian Semites converted Mesopotamia into an Eden, and the Arabs neglected the area to such an extent that it reverted back to swamp. Why did the Arabs not respond to the challenge of the Tigris and the Euphrates? (1972:594)

Without going further into the substance of the argument, and examining all the evidence, we can view Gumilev's conclusion as dismissing Toynbee, but raising its own problem. Claiming that Toynbee fails to take into account "the problem of ethnic distinctiveness," Gumilev concludes that another unified approach has failed. He states that, as a result of ignoring the ethnic factor,

the combination of two incompatible sciences produced not even a sterile, if working, mule, but an unviable monster, something like the mythical griffin. It would appear that any attempt to move along this course would fail to reach scientific results (1972:595).

The main problem presented here, is that Gumilev's strong language towards this bio-social approach seems oddly out of place after he has suggested the viability of Yefremov's bio-social synthesis in his concept of "sociosphere." Moreover, Gumilev will soon take a tack towards integrating these two lines through general systems theory, a method derived from biology and applied to sociology. Therefore, it must be Toynbee's particular method that is rejected.

Moving on, one might view Gumilev's use of Toynbee as a springboard for launching his own model, suggesting that the problem might be approached, not on the basis of "how mankind as a whole affects nature, but [rather], how it is affected by various peoples at different stages of their development." Gumilev (1972:595) recognizes a problem in this approach, because, if
each people . . . at any given stage of its existence, affects nature in a distinctive way, we cannot possibly obtain an overview of such a variegated changing pattern and, short of arriving at obviously wrong conclusions, we risk forgoing the possibility of making any kind of generalization and thus gaining an understanding of the problem.

In response to that problem, however, Gumilev proposes reliance on a taxonomic system, a method involving "the classification and systematization of observed facts . . . commonly used in the natural sciences but neglected in the humanities." One might view this proposed method as the cornerstone Gumilev uses in constructing a system of ethnus, from the first chronological table of climatic variations to the later proposed internal structure and regularity of an ethnus. He thus claims to keep his research on the relationship between landscape and ethnus "within the area of geographical ethnography and not transgress into the ethnography of the humanities." Again we encounter a politically constrained, social construction of academic reality that limits Gumilev's ability to openly engage in interdisciplinary research at the theoretical level. This epistemological problem, however, does not significantly concern the discursive grid of Anglo-American disciplinary matrices. But as Gumilev defines it more clearly, I cannot but agree with his rejection of "the principles of ethnic classification customary in the humanities (race, social life, material culture, religion, etc.)," while I can embrace Gumilev's (1972:595) selection of a basic principle and approach founded on geography. That basic aspect is the biocenosis, defined [by Kalesnik, 1955: 359] as "a patterned complex of forms historically, ecologically and physiologically combined into a single whole by common conditions of existence."

If one now assumes that a biosocial structure underlies those elements from the humanities that characterize ethnus, then, consequent to this principle of ethnus, one can accept Gumilev's conclusion that "people would also enter into the biocenosis of the biochores that they inhabit."
Based on Gumilev's proposed principles of classification, whereby an ethnos can be identified by its process of biocenotic interaction with its habitat, we can now view more clearly the method by which an ethnos is an indicator of change in its landscape. But this proposition requires a further set of definitions. First, Gumilev observes that, if a biocenosis is a stable formation and its constituent forms are linked by a food chain...which usually ends with a large carnivore or with man...a characteristic feature of biocenosis is the constant commensurateness of the number of individuals in all forms constituting the complex...[then], this ratio usually fluctuates within a certain range of tolerance (1973c:595).

Second, given the proposed relationship between ethnos and this process of "commensurateness" within a biocenosis, the concept of an appropriate population ratio is further developed on the basis that:

[as] there are a huge number of ethnic units, even if [some of their populations are] numerically very small, that enter into biocenoses within particular biochores. Compared with these tiny ethnic groups, sometimes simply tribes, the modern and historical civilized nations appear as leviathans, but there are few of these and history has shown that they do not last forever (1973c:595).

On the basis of the foregoing premise, Gumilev constructs his formal primary classification of the following two categories:

(1) ethnic groups which enter into the biocenosis become part of the landscape and are limited by it in their reproduction. This mode of existence is typical of species that seem to have been arrested in their development.... In Zoology, these species are known as persistents, and there is no reason why the term should not be applied to ethnic groups that have become frozen at a certain point in their cultural development;
(2) Ethnic groups which multiply intensively, settle beyond the boundary of their biochore and change their primary biocenosis...[are] known as succession in the context of physical geography (1973c:596).

In the first category, the initial point, i.e., of ethnos entering into biocenosis, also corresponds to his earlier suggestion of an analogy between ethnos as an indicator of historical geography and Kalesnik's definition of landscape as an indicator of physical geography (cf. p.194). This principle, however,
would also apply to the initial stage of the second category which proposes a successive, or dynamic aspect to the rise of ethnoses within the territory defined by any landscape.

At this point, Gumilev presents examples which range widely over time and place, and which are classified according to the two categories, i.e., persistent or successional. But to place this argument in perspective, we should examine some of the generalizations of empirical history that he presents as evidence. The first one Gumilev presents is the most extensive and flatly supportive of his population regulation hypothesis of ethnoses in biocenosis, albeit questionable in its presentation of "motivation." He thus describes Indians of the pre-Columbian North American prairie as

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living within the biocenosis . . . the number of people in tribes depending on the number of deer and bison, and internecine tribal warfare limiting natural increase was the norm of communal life. The purpose of this warfare was not the seizure of territory, the enslavement of neighbors, the expropriation of property, or political domination. The aim was killing for the sake of killing. The roots of this custom went back into remote antiquity, and its biological function was clear. Since there was a limit to the available amount of game, tribes had to get rid of their rivals to assure themselves and their descendants the possibility of killing animals for food. This was not warfare in our sense, it was an interspecies [sic. intraspecies] struggle that preserved the particular biocenosis. With such an approach to nature, there could, of course, be no talk about making any changes in the environment. Such changes were viewed as undesirable spoilage of nature, which, in the Indians' view, was at the zenith of perfection (1972:596).

Despite this very dubious interpretation, Gumilev gives a second example:

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Among the land-tilling Pueblo Indians, the same attitude prevailed . . . except that they used corn instead of the meat of wild animals. They did not expand their fields, they did not try to use streams for irrigation, they did not improve their technology. The preferred to limit population growth by letting disease carry off weak children, and by carefully nurturing the strong . . . . Here we have a different economic system, yet with the same attitude toward the environment! The mystery is why did the Navahos not adopt tilling of the land from the Pueblos, and why did the Pueblos not borrow their neighbors tactics of devastating raids? (1972:596).

Here we find Gumilev has compared two differing ecosystems and human adaptive
strategies. In a third comparison, he asks why the Aztecs differed from Pueblos in their impact on the landscape, as when they migrated to the Mexican highlands in the 11th to 14th centuries and intensively changed both landscape and landforms. They built teocalli or temple mounds (landform variations), constructed aqueducts and artificial lakes (engineering hydrology), planted corn, tobacco, tomatoes, potatoes, and other crops (floristic variation) and raised the cochineal insect as a source of red dye (faunistic variation). In short, the Aztecs transformed nature while the Apaches and Navahos preserved it (1972:596-97).

While these changes had been made long before by the Aztecs predecessors, Gumilev assumes otherwise. Asking the cause of this vast difference in human response to the respective environments, he rejects climate, even though it might be assumed that the warm climate of southern Mexico played a decisive role, even though it was not so different from the climate of the Rio Grande. But we also know of great earthworks of unknown function in the Ohio valley... Evidently there once lived a people that changed the environment without being bothered by climate, just as climate does not seem to interfere with Americans of Anglo-Saxon origin (1972:597).

The final North American example turns to the northwest coast and examines the Tlingits who, like the Aztecs, were a slaveholding society. In discussing the importance of slaves to Tlingit society, Gumilev concludes that "despite all this, the Tlingits were a typical hunting tribe, i.e., they would be assigned to the category of conservative, static ethnic groups in our classification."

In presenting examples from societies which can be classified in either one or the other of his categories (persistent and successional), Gumilev (1972:597) introduces an example from the very different environment of northern Siberia, where he finds a similar situation, in that Peoples of the Ugric, Tungus, and Paleosiotic groups in their way of life and economy, seemed to be fragments of the landscape, or crowning components of the biocenosis. More exactly, they "entered" into the landscape. An exception was the Yakuts, who in their northward movement had brought with them their herding traditions and continued to raise horses and cattle and to cultivate hay fields, thus introducing changes into the landscape and biocenosis of the Lena valley. This anthropogenics succession, however, simply led to the formation
of a new biocenosis, which was then again preserved in a stable condition until the coming of the Russians.

Turning to the Eurasian steppe, an area that is his field of expertise, Gumilev (1972:597) finds quite another situation, in that, while one might suppose that extensive nomadic herding as the basic way of life would rule out any changes in the environment, the steppe was covered with kurgans [burial mounds] with herds of domesticated animals that dislodged the wild hoofed animals and, in remote antiquity, the steppe briefly contained fields of millet. Huns, Turks, and Uigurs practiced primitive tillage of the land. We thus have evidence of a constantly recurring desire to change the environment. Quantitatively these efforts were, of course, negligible compared with changes in China, Europe, Egypt, and Iran. The nomads' transformational efforts also differed fundamentally from those of the sedentary peoples in the sense that the nomads sought to improve the landscape rather than to transform it. We could nevertheless assign the Eurasian nomads to the secondary category of our classification, just as we included in it the Aztecs, but not the Tlingits, even though the class relationships of the latter were far more highly developed.

In examining tribes and societies of the tropical zone, however, Gumilev finds that their situation adds nothing new to the data already discussed. Therefore, he turns to the classical old world civilizations of China, Egypt and Mesopotamia, leaving aside Europe, as "our task is to seek out patterns, and this can only be done on the basis of completed processes." Here, we assume he means that European civilization continues along with the particular ethno-processes connecting it to a specific biocenosis and landscape. But is not also China's way of life continuing much the same as Europe's, despite their mutual shift from an age of empire to that of nation states. Nevertheless, let us now examine how Gumilev treats these regions of classical civilization.

Beginning with remote antiquity, Gumilev examines the effect of a more southerly storm tracks on climate and the environment of Egypt and Mesopotamia during the Wurm stage of glaciation. As we know, "the Sahara was then a flourishing steppe," and gradually succumbed to desiccation with a northward shift of the storm tracks. According to Gumilev, however, this desiccation
led the ancient residents of the Sahara to give attention to the swampy valley of the Nile river, where the ancestors of wheat and barley were growing on the valley edges among wild-growing grasses. The Neolithic tribes mastered the tilling of the land, and during the Copper Age... began to cultivate the Nile valley systematically. ... rule [of the Pharaohs] was based on the resources of the landscape, which had already been transformed... and did not undergo further fundamental change except for engineering structures such as canals, dams, pyramids, and tombs, which, ... were anthropogenic landforms. [But as] Nubians, Libyans, Assyrians, Persians, Macedonians, and Romans exploited Egypt's riches, the Egyptians themselves turned into fellahin who continued stubbornly to preserve the biocenosis that had been created by their ancestors (1972:598).

In a similar assessment of Mesopotamia, Gumilev finds that despite some physical-geographic differences, the fertile Tigris-Euphrates sediments and waterways were ideal for human development, although taking considerable effort and labor. The draining of swamps, damming of river channels, and irrigation, all necessary for creating arable land, were accomplished by the ancestors of the Sumerians, who were simple tillers and herders without other means of existence. They developed no writing, built no cities and had virtually no breakdown into classes, but they transformed the landscape to such an extent that subsequent generations were able to benefit from their labors (1972:598-99).

From these two examples, Gumilev warns against concluding that "primitive peoples have any advantages over civilized peoples in the transformation of nature" and adds a comparison to India, where the builders of the ancient cities of Mohenjo-Daro and Harrapa were divided into classes, possibly based on racial affiliation, ... [which provides] an example of a people at the stage of a class society that was also capable of transforming its habitat (1973c:599).

He does conclude, however, that all of cases discussed have a common feature: the capacity of an ethnic group to make an extraordinary effort at times. The purpose of that effort is an other matter and not of concern to us here. The important thing is that when that capacity for a super effort weakens, the newly created landscape merely maintains itself, and when the capacity disappears, the ethnic-landscape equilibrium is restored in the form of the biocenosis of the particular biochore. This can happen anywhere, regardless of the scale of the effected changes and of the character of the activity, constructive or destructive (1973c:599).
If, as Gumilev assumes, the above conclusions are actually the case, then he has identified a new aspect of both biogeographical and historical geographic processes "not previously taken into consideration," and in which

the transformation of nature is not the result of continuous action by ethnic groups, but the consequence of short-lived stages in the development of these peoples, i.e., the same creative processes that are the stimulus for ethnogenesis (1973c:599).

Given the factuality of the preceding conclusions, and the resulting identification of discontinuous sequences by which people enter into transformative relationships with their encompassing landscapes, Gumilev has established the core of a biosocial argument for an ethnogenic process. He also identifies this discontinuity as energetic bursts within a relatively stable flow (cf., R. Thom's "catastrophe theory, "). These discontinuities, however, necessarily involve both spatial and temporal phenomena and occur primarily within the ecological domain where ethnos acts as a linking process between social and landscape factors. Waiting until later to identify these discontinuities, Gumilev further substantiates his argument by again referring to historical examples, in this case, drawn from ancient Europe.

In the first instance, Gumilev discusses the invasion and settlement of Western Europe by tribes of "militant, ironworking peoples -- the Celts, Latins, Achaeans, and others." Establishing a relationship between each of these peoples and their landscapes as a process independent from the levels of their social development, Gumilev (1972:599) finds that they had

established a large number of land-tilling communities and transformed the landscape by cultivating the virgin soil. [thus] for almost a thousand years no large states arose in Europe because each tribe was able to defend itself, and conquests were difficult and not advantageous: the tribes would rather be decimated than subjected. . . [until about 500 B.C., when] the dominant institution in the created cultural landscape was parceled agriculture with intensive cultivation of plots. [But] at the end of the millennium, the land parcels were replaced by latifundia, in which the attitude towards the environment became more rapacious and the basis for conquest was laid.
Here, Gumilev counters the general assumption that Rome conquered the Mediterranean and Western Europe as the result of some newly found strength... [proposing instead, that] the same result could have been achieved if Rome had been no stronger than before but the people around it had become weaker (1972:599).

Therefore, he argues, Rome's expansion corresponded to a "retrogression of the cultural landscape" until the 6th century A.D. when its population and Empire declined, and culminated in a "restoration of the natural landscape." But despite an "accidental" coincidence between the "extinction of the Roman nation," and a change the West's "social formation," the situation differed from the Eastern Roman Empire where the population did not decline "because the ethnic background was different and ethnogenesis followed another path."

From the preceding data, Gumilev claims to have identified a natural pattern in that "the entire cycle of landscape transformation and ethnogenesis from the creation of different ethnic groups to their complete levelling lasted about 1500 years." The concept of a generalized cycle, or natural lifespan, of an ethnogenesis will become more important in Gumilev's later classification of ethnogenic processes. Nevertheless, he cites several other examples of ethnogenesis, including the Mexicans as "a recently formed people whose ethnogenesis took place before the eyes of the historians." One problem does arise, however, in his example comparing Siberian hunter-gatherers to tillers, and their co-existing within a relatively contiguous habitat. Is it actually self-evident that because at one time ancestors of both hunters and tillers adapted the landscape to their needs and transformed it in different ways, their descendants retain the status established by their ancestors, and drag along the heritage of past eras in the form of traditions that they cannot and do not want to break? (1968c:600).

There seem to be a contradiction between the influences, in that, if an ethnic population has reached an inertial state of equilibrium with the landscape through persistent biocenosis, does this experience shape their consciousness,
elements of desire or will. Alternatively, do the repetitive patterns of daily life embed into their behavioral stereotype a stasis that both constrains an adoption of different modes of production and alter the biocenosis. One answer comes from the continual biocenocenotic cross-over, wherever possible, between marginal individuals and small groups of steppe argrarians and hunters. Or also from those primary activities shifting towards secondary economic activities, e.g., arts, crafts, clerical and mercantile skills associated with steppe civilizations such as the Mongols. But most importantly, the nature of urbanization involves a cyclical or wave like progression of transformation from other habitats to a predominantly urban one. This process certainly represents a prominent feature of many historic adaptations and, for example, probably the key to understanding ethno-landscapes of the Muslim world.

So far, Gumilev has not addressed the qualitative distinctiveness of urban forms as such. Not even when treating the Khazars did he discuss their unique biosocial character as a largely urban ethnos. But at this point we must accept his theoretical model as incomplete, and await its continuing development as he presents further propositions based on empirical generalizations. Even so, in presenting examples to support a notion of how behavioral stereotypes resonance with their articulated landscapes, ways-of-knowing, and ways-of-life, he has still not dealt with any urban form of an ethnic landscape. But in his generalized empirical examples, Gumilev does refers to sporadic energetic events which disrupt the homeostatic environment, fracture boundaries and generally induce drift towards change in transitional margins. As such, we may infer differences in a range of landscape types and associated ethnic communities and styles of co-adaptation, including urban. These concepts, however, can also be viewed to a certain extent as a counterpart to work in human social ecology and bioenergetics going on in North America.
One example of bioenergetic research corresponding somewhat to Gumilev's work in that direction is that of Eugene and Howard Odum (1979). Among others, the Odums have proposed an energetic basis of a biologically embodied human culture and social ecology. But the Odums' model corresponds more closely to niche specialization within the system, and carries with it a corpus of ecological terminology. Here we propose an analogy based on a standard model of ecological succession in which there occurs an outward migration from optimal niches. This process begins when population pressure strains the biocoenosis's carrying capacity and, subsequent to adaptation by the first wave of emigrants to secondary niches, a crash ensues at the core when its carrying capacity has been exceeded and secondary niches are already filled by the primary adapters.

Gumilev has also suggested that this process of natural selection might possibly trigger a Lamarckian shift in the gene pool and subspecies characteristics. If this interactive type of dynamic niche specialization, migration, and energetic complex represents Gumilev's model of equilibrium in natural evolutionary processes, then the implications remain to be evaluated. If, however, his following description of ethnogenesis sums up the model at this point of its evolution, then the social elements become even more important in distinguishing a human ecology from a general population-resource based model. Therefore, in Gumilev's final conclusion here, he states that

the creative transformation of ethnic groups, and the associated anthropogenic transformation of landscapes, occur here and there on the earth's surface in the form of jolts, followed by periods of damping inertia that produce a stable condition of equilibrium between the ethnic groups and their environment (1972:601).

If that is the case, he concludes, then

we will have attained the goal of our study -- a realistic principle of classification of anthropogenic factors of landscape formation. . . the essence of . . . [which] does not lie at the surface of the phenomenon, amid the infinite ethnic diversity, but at greater depth, distinguishing three conditions of ethnic groups: the creative, or
dynamic; the inert or historical; and the stable, or persistent, in which the ethnic group enters into biocenosis. These conditions differ only in terms of the capacity to make a super effort, which would be zero in the last variant (1972:601).

Having restated the core argument in the previous passage, Gumilev then situates his model in a contextual relation to other disciplines. In the terms of dialectical social change,

the moment of dynamic creativity of an ethnic group, corresponds to the change in the mode of production, e.g., a leap in the transition of the quantitative to the qualitative, . . . [which] is also evident in the formation of landscape (1972:601).

And yet, if the preceding premise is more fully expressed, as Gumilev states, in the analogies to other fields of knowledge, as organized in the following table (fig.6), his final conclusion here proposes to have observed a global pattern previously unreflected in other fields of knowledge, [therefore situating] ethnology, in the classification of the geographical disciplines, . . . at the contact between many disciplines as a special area of empirical synthesis (1972:601).

This conclusion, however, raises some new questions. For example, can all ethnoses fit so neatly in the form implied by the categories: dynamic, inert, persistent. Or for that matter, how does the capacity of an ethnos change over time and undergo processes similar to social development during its entropic flow of inertial energy. Finally, has this natural succession model not simply provided an ecological analogue to the laws of social forms of development outlined in the model of historical materialism.

Nevertheless, Gumilev has certainly broken new ground in approaching the central problem facing geographers in identifying the mechanism by which human agency incorporates both social and biological dimensions and enters into the biocenosis while affecting change in its encompassing landscape. In the following chapter, this issue is explored in even greater empirical detail.
Here, Gumilev introduced anthropogenesis as a factor influencing landscape formation, and ethnogenesis as its active property, while correlating this process to other approaches, both geographic and from other disciplines. He now turns his attention to defining the geographical point of view as necessary to solving the problem of how this active element affects the landscape process. The focus in the following chapter turns to the criteria proposed as influencing this process and the question of adaptation.
CHAPTER XI

ETHNOCORESIS FROM THE GEOGRAPHICAL POINT OF VIEW

Confronting the issue of human agency in landscape change, Gumilev favors a more biological basis for the joint biosocial causation of such human behavior. In fact, he builds a case for a correlation between human evolution and ethnos as a set of behavioral traits modifying the capacity for distinct adaptations in accord with unique encompassing landscapes. And after previously identifying two categories of ethnos: persistent and successional, Gumilev now further qualifies them as static and dynamic. But first, he attempts to establish the reciprocal role of ethnos and human evolution.

In general, the data on which Gumilev has constructed an ethnogenic model has been derived from pre-modern history. But directly to our concern here, is the question of whether or not the model can effectively encompass a much broader span of history. Answering the question of how this model encompasses the contemporary period may entail addressing the issue of evolutionary biology. Therefore, this chapter addresses this latter issue under the proposition that ethnogenesis continues on as a consistant manifestation of human biological evolution. This topic, however, raises some crucial problems both within the model and in regard to modern civilization, as the two types of ethnogenic process -- persistent and dynamic, are viewed in terms of their
significance for adaptation along two lines: (1) human adaptation to a specific environmental complex; and (2) human adaptation of the environment to suit our needs. There is of course, as Gumilev continues to argue, a dialectic between the two possibilities.

Before looking at how the two lines of adaptation differ, Gumilev refers to the hominid beginnings, in which several forms (species) may have co-existed in the process of one more successful group succeeding the others. As all hominids have been shown to be predators, they occupy the highest ecological niche in biological communities. At the end of the last glaciation, [however], all branches of this genus died out except for a single species Homo sapiens, i.e., modern man [who] spread over the entire land surface of the earth and later, during the historical period, penetrated onto the surface of the hydrosphere and introduced changes of such magnitude on the earth that the entire landscape shell may now be regarded as anthropogenic (1972:45).

Since Gumilev wrote this, increased human jettisoning of space garbage and pollutants spewn into the atmosphere, including fluoro-carbon erosion of the ozone layer, have extend anthropogenic change of the biosphere even further. In this regard, and following work by Margouli (1987) and Lovelock (1979), among others, on the "Gaia hypothesis," I would make the point that Vernadskiy's concept of biosphere has also been extended to encompass the entire planet as a living system, from core to lithosphere to biosphere. In fact, Lovelock and Margouli have demonstrated a strong possibility that biological phenomena plays a definite role in modulating the system, especially the atmosphere. Therefore, the anthropogenic role must be seen within the framework of an active, rather than passive, biosphere and its collective effects on the planet earth as a system. Nevertheless, as Gumilev points out, virtually all of the planet's land surface yields evidence of human activity at some period. This activity has always wrought some change in the particular landscape in which it was situated. What Gumilev attempts to demonstrate, however, is that
such activity was co-adaptive, modifying human behavior and the natural landscape, and in most cases, with but one direction predominating. That is, either a static or dynamic form of human agency occurred in discontinuous instances, each involving ethnogenesis or particular population-landscape ensembles. Anthropogenesis is accomplished in part through ethnic behavior, a unique form of biocenosis and landscape modification within the biosphere, as Gumilev (1972:46) finds that

Homo sapiens, unlike other vertebrates, did not limit his existence to a particular habitat and was able to adapt to a variety of natural conditions, thus setting himself apart in the ecology of vertebrates.

Returning to the two lines of adaptation, Gumilev finds that although "these two processes overlap," for purposes of analysis they are "considered separately." The first line of adaptation involves a population encountering new physical conditions in an environment, and consequently responding by "changing the mode of his economy and consequently developing a new stereotype of behavior." Alternatively, a population might have "adapted the environment to their needs, creating "secondary, man-made life communities according to an established behavioral stereotype." Now generalizing from certain empirical data, Gumilev concludes that one cannot establish any causal or functional relationship between these two chains of regularity (environmental change and social history). Describing early man's affects on the biosphere, Gumilev found "a particularly strong impact on fauna," and cited Budyko's (1967) findings that "in the steppes of Eurasia the mammoth was exterminated by paleolithic hunters," while numerous other peoples were equally responsible for the elimination of other species from earliest times down to the present. Current estimates (Myers, 1984:154-55) cite a loss of about one species every day, and, by the year 2,000, nearly one third of all species existing since the rise of hominids will have disappeared. Moreover, as Gumilev reminds us, "man's
present attitude has been true of all historical formations, and should not be viewed as a result of social progress."

Moving on to the anthropogenic impact on flora, Gumilev finds "even greater deformations of the natural environment. He blames domestication of animals for invariably tending to "impoverish a plant community," and cites well known examples of goats destabilizing the Mediterranean ecosystem. Then too, intensive agriculture not only displaces wild species, but accounts for deforestation and, moreover, has generally caused severe erosion of irreplacable topsoil. Again finding "that mankind has deformed nature under all historical systems, it is evidently an inherent trait." Nature, on the other hand, has defended "herself" as Gumilev gives examples of feral species, coyotes and weeds which have profited from human degredation of natural landscapes and displacement of other species. He found, however, that the net result was invariably "a simplified structure of the life community."

In concluding his assessment of the historical process of human agency as invariably degrading the natural environment, Gumilev rejects any direct correlation with social development. He finds that even the regeneration of the environment has not coincided with landmark dates in the social history of man. Can on therefore say that there is a causal or functional relationship between these two chains of regularities? Evidently not, since man's impact on the landscape cannot be termed progress either in the everyday sense -- a desire for the better; or in its scientific meaning -- the upward evolution from lower to higher forms (1972:47).

From this basis Gumilev makes the following conclusion, that the responsibility for the distortions of the environment cannot be laid to the social form of motion of matter ... [and] we are evidently dealing here with a phenomenon of another order, namely the enhanced aggressiveness and adaptability not of man as a member of society, but of the species Homo sapiens as one of the components of the biosphere of planet earth (1972:47).

Gumilev confronts us with the proposition that human agency in landscape
modification might not be entirely a rational process. This, of course, coincides with a general environmentalist position of anyone who has either been involved with, or is simply well read on, current ecological issues. There are decidedly irrational processes involved in the organized human agency that despoils its own habitat and that of other species, as well as the physical base that supports us all. For social determinists, it is human greed, political manipulation, or other conscious behavior that is responsible for such negative agency. On the other hand, while Gumilev does not excuse such behavior, he asks if there may not be a more biological explanation for a process so widespread over such divergent social, ethnic and locational examples.

Two further propositions issue from Gumilev's conclusion about the biological basis of human agency. First, in continuing landscape modification and destruction human agency does not subject itself to a rational notion of progress and social control, but to a primary biological determinism. If that process is reversible, or, allowing for an irreversible world, then re-modified to some ecological balance, it would be a social agency, rather than biological man that accomplishes the feat of re-transforming the sociosphere to accommodate the biosphere. Here we have a unique dialectic between human agency and adaptation, in which mankind adapts its behavior so as to transform landscape in order to effect a consciously sought equilibrium between man and the rest of nature. Second, we encounter a twofold question: Gumilev asks, given Homo sapien's dual relationship to the landscape, how does such a process,

(1) fit into an evolutionary framework of vertebrates, and (2) allow mankind to continue to function as the highest element within life communities after creating tools and learning to use fire, or does he enter into another sphere of relationships with the environment together with his domesticated animals and crops? (1972:47)

In this sense, H. sapiens have never left the world of nature in spite of a "consciousness" that allows reflection and secondary "meta" reflection on mental
constructs of actions. Domestication has involved a crucial and complex symbiosis between the species H. sapiens, inclusive of our own "humanity," and the natural world within which mankind acts out whatever conscious "labeling" of behavior is ascribed to motivation. In relation to the unique symbiosis of this latter situation, Gumilev's question of whether or not we have "entered into another sphere of relationships with the environment" which includes our domesticates, becomes significant in identifying the anthroposphere more clearly as the domain of discrete, discontinuous ethnic phenomena.

The point Gumilev raised regarding our unique status as a life community including our domesticates within an encompassing landscape leads to a crucial proposition. That is, given the premise of evolutionary irreversibility, Gumilev (1972:47) asks, if

Within the biosphere, this [irreversibility] gave rise to a distinctive layer now generally known as the anthroposphere. Do the principles of natural selection still apply to that sphere? And is its separation legitimate?

He answers in the negative: first, because the anthroposphere as a subset of the biosphere, and second, because, "according to the law of irreversibility of evolution, animals and plants cannot return to independent life because they are incapable of meeting the competition of wild forms." This position, supported by evidence of increasing interdependence among hybrid species and human support systems, correlates to the Darwinian opinion that, in Gumilev's (1972:47) words, "modern man continues to be subject to the same natural selection that governed his ancestors."

Despite opinions contrary to the premise that humans continue to be subject to natural selection, Gumilev argues on the basis of extensive new research that this condition does persist, but within a transformation from morphogenic to ethnogenic features. Some support for his inclusion of the
entire range of domestic species into an encompassing anthroposphere comes from Braudel (1980) and his review of Sorre's (1923) work on the biological basis of human geography. Sorre's notion of the oecumene incorporates all the domestics, including: "43 out of a possible 2 million animal species, and 600 plant species out of a possible 600,000." (Braudel, 1980:105). Here a notion of integration is proposed as fundamental to the human project, which also accords with current ecological approaches to the role of man-plant-animal-environment complexes. Yet another trajectory is proposed by Gumilev as, in searching for a solution to these questions, he proposes modifications of ethology based on symbioses between elements of the domesticate complex. As such, he proposes that the vector, ethnos, has taken on a role as matrix for other evolutionary transformations.

If the biological process of natural selection continues on in Homo sapiens and is manifested in a biosocial morphology rather than skeletal or anatomical change, what are the mechanisms of that transformation. Assuming from the research presented by Gumilev that modifications of particular anatomical features have continued, e.g., "gracilization . . . [by which] the human skull has become more slender . . . [either] from the transition from a hunting economy to agriculture" between the 6th to 1st millennium B.C.. As Debets (1961) claims, or as Gumilev suggests, the reverse is also possible: "man having evolved found a new occupation," then it must also effect human ethology. But here we come to another crucial point developed by Gumilev. If these changes are biological in character, Gumilev argues that

the historical evolution of human societies involves biological processes that stimulate even skeletal changes. But in that case, there should also be variations of smaller range affecting physiology and behavior (1972a:48).

It is this smaller range of physiological and behavioral characteristics which
constitute the physical building blocks of Gumilev's proposed ethnogeny. While admitting that they are more difficult to identify, he assumes that they exist based on a precedent of gracilization, or any like anatomical modification, affecting human ethology. This will permit a search for the evolutionary factor in human behavior that operates in conjunction with some well known, or proven, social factor. In the case of such a discovery, "this evolution within the species would assume distinctive forms under the impact of the social system."

Searching for a Biosocial Evolutionary Factor

To support the argument that a biosocial form of the evolutionary process continues on in modern man, Gumilev looks at paleontology for the data, but finds it inconsistent in its chronology, citing problems in the study of somatic subdivisions, particularly the formation of races. Assuming also that this "purely biological approach" (i.e. race) would offer no advantages since race neither exhibits a greater capacity for adaptation that enabled man to change the face of the earth . . . [nor do] races really constitute communities, but simply subdivisions of a scientific classification based on certain physical traits (1972:49).

The fact is that most all Homo sapien individuals are descended from racial mixtures at first or second order, for "really existing, directly observable communities are always heterogenous." It is precisely these communities that constitute the focus of Gumilev's research, and he claims that ethnic groups,

represent the collective forms of existence of the species Homo sapiens that interact with the elementary ecological taxons of the species. Consequently, ethnos is not an abstract concept, but a phenomenon of nature, and the purpose of our investigation is to arrive at a comprehensive definition of that concept (1972:49).

Pursuing the material, biological basis of ethnos, Gumilev reviews the history of the discipline and finds that his own approach opens up the
problematic use of historical data, as

the ethnic history of man has yet to be written. Instead of dealing with an ethnos, historians usually investigate either the institution of the state or social relationships or cultural traditions (1972:49).

The roots of ethnography lay in geography during the 19th century, but through focusing on so called "primitive" peoples, it grew as a descriptive method even after the pendulum swung in the first half of the 20th century to treat all ethnic groups and tribes "as historical and social categories," and the discipline became absorbed into sociology. In this mode, urbanization dissolved both the area for ethnographic fieldwork and its "theoretical significance."

How would such a proposition fare among other ethnographers.

To answer the question Gumilev has raised of "where to situate ethnography?" in both a Soviet and more general context, we turn to a group of Soviet and Western ethnographers involved in a 1976 discussion on comparative anthropology (Gellner, 1980). In his introduction to this collection Meyer Fortes (1980:xix) points out that there is "clearly no such thing as a unified, let alone monolithic, system of theory or practice in Soviet ethnography."

Clearly taking a more than editorial role in the discussion, Gellner finds that many of the Soviet positions came close to his own structural-functional view while Western neo-Marxist positions vary considerably within both frames.

This latter point was evidenced by reference to a debate which pitted Godelier, a French structural-Marxist, against Semenov, a Soviet, whose position was found by Gellner to be closer to his own, positivist functionalism.

Gellner found four issues dominated Soviet ethnography, a discussion of which may further situate Gumilev's arguments. First, Gellner (1980: xiii-xvi) notes, is "the relationship of the economy to the polity, of production to coercion," a point less important to Gumilev's work. Secondly, in a "closely related problem of typology and evaluation of human societies," he notes the
difference between: (1) a Western, Weberian "gate-keeper" approach in which society emerges from a unique set of conditions, with no "universal shared potential"; and (2) a Hegelian "acorn-to-oak-tree" set of developmental laws inherently bound up in every society's potential. This latter "acorn" approach certainly finds a balance with the gate-keeper model in Gumilev's work, where each ethnos contains within its ethnogenesis a process of rise and decline in a life-cycle pattern. And yet each ethnos is unique in its genesis and subject to more random processes before entering into the regularity of both development as a social formation and its entropic, oak-to-stump journey.

In his third point, Gellner (1980:xv) finds extremely important . . . the question of the nature and role of ethnicity, both throughout history and in contemporary industrial society . . . in particular, the insistence of . . . the definition of "ethnografia" in terms of the study of the "ethnos," provides a charter for the study of this topic, both in the past and present.

As an example of this point, Gellner refers to Semenov's (1980) conceptual scheme as explaining why it was "essential for humanity to be organized into diverse ethnic groups, quite apart from the accident of dispersal and distance." Demonstrating, like Gumilev, the historical necessity rather than contingency of ethnicity, Semerov's theory "requires both uneven development and its political and ethnic expression to explain how history can, at certain crucial points, move on to higher stages." Moreover, the exploration of nationality in the contemporary world is crucial to both East and West.

Finally, in Gellner's fourth observation, Soviet ethnographers stress the importance of ethnicity's increasing manifestation through culture. But, by what Russians call "spiritual culture," Gellner (1980:xvi) thinks they mean "leisure activities and intellectual idiom and identification, rather than the organizational infrastructure of society." It is thus through the study of ethnos that Soviet anthropologists have "staked their claim to the study and
interpretation of Soviet culture." Here we can see why Gumilev opposes the hegemony of official socio-cultural discourses on ethnos, and wishes to draw its study within the natural-sciences-as-physical-geography, where a fuller human ecology and broader cultural explanatory model can be developed. This would occur first through application to the historical reconstruction of ethno-landscape processes, and then possibly to contemporary problems.

If Gellner's preceding observations on Soviet ethnography are reasonably accurate, then in attempting to change that situation, Gumilev calls for bringing ethnography out from its status as merely a socio-historical concept, and back into the biogeographic fold through developing a method by which to generalize the data according to the theoretical model he is developing. He also carefully avoids confusing ethnic communities with other forms of social life, especially those associated with the development of the means of production through the social motion of matter, or the Marxist model of five stages of social formation. Admitting the imprint of social development on all forms of human existence, he also points out that as ethnos is a biological, hence natural phenomenon, interpreting it from a social point of view would, therefore, be neither logical nor fruitful. But constructing the biological "point of view" as a method is his next task.

Towards a Methodology for the Biosocial Approach

In developing an appropriate method for making use of biology within a study of ethnos, Gumilev (1972:50) develops two analogies: (1) between collective life forms in other species (herds, flocks, etc.), and human ethnos; and (2) between "signal heridity" and the cultural transmission of "traditions." First, he discusses the social, or aggregate, formulations of other species, finding that rather than a direct analogue, "each species tends to
form groupings in its own way, (which) for Homo sapiens . . . would be ethnos," not identical to that of any other species. Constructing an elementary scheme to classify ethnos at a primary level, he gives the example of a simple case: a tribe with strictly defined area, common ancestors, mode of life, and forms of occupation, and a clear difference from its neighbors. To this situation of ethnos, Gumilev ascribes a necessity of endogamy, as integrating an outsider lacking the appropriate behavioral stereotype and communication skills would be a costly investment. Furthermore, this situation would be relatively stable as "each new generation stives to reproduce the habits and life cycle of its predecessors, thus giving rise to the cultural tradition of the given ethnos."

This argument and hypothetical example does not seem convincing, as a more or less equally convincing example could be put forward to support exogamy and Mauss' (1929) notion of exchange relationships based on reproductive capital. Furthermore, a good hunter from another tribe might be so valuable an asset as to offset the learning curve problem. True, suspicion would, as it still does, limit the role of the outsider, but with offspring brought up in the way of the "host" tribe, it could be overcome in time. Again, a distinction would have to be made for varying cultural characteristics, whether a group was extrovert and indrawing, or introvert and closed to outside influences. Finally, the notion of non-antagonistic continuity between generations avoids the problems of the Oedipus complex, which as discussed by Fortes involves:

a conflict of successive generations, (not, as Freud would have) emanating solely from the aggressive and envious wishes of the filial generation . . . [but], engendered by the reciprocal ambivalence precipitated by the crucial dilemma of parenthood . . . a culturally authorized and therefore socially controllable mechanism that permits regulated and partially disguised confrontation of the intergenerational ambivalence and so drains away its destructive charge (1980b:209).

Turning to Gumilev's second issue, tradition as signal heredity, while stepping further into the breech he manages to close off some of his
vulnerability on this issue by proposing a mode of cultural transmission that partially explains the attractive basis of ethnos as the necessary, biosocial human condition of organization. The problem of transmission in this model assumes that external factors explain an interruption of the ethnos in its development, but here Gumilev confirms that the continuity process is internal, involving the habitual performance regime of a group. Citing Lobashev's (1961) discovery of signal heredity as "the mechanism of interaction between generations," in which Gumilev (1972:50) states that

individual adaptation takes place through the mechanism of the conditioned reflex, giving an animal an active choice of optimal conditions for life and self-defence . . . [and] are transmitted by parents to children or by older members of a herd to younger members so that the behavioral stereotype becomes the highest form of adaptation.

Translating this discovery into human terms, Gumilev finds that the mechanism of transmitting a cohesive attraction for ethnos is defined here in interactional terms, much like Barth's (1969:14) model in which he finds that "boundaries are biological as much as social." Gumilev finds that in humans

this phenomenon is known as the continuity of civilization, which insures the signal of signals, namely speech . . . [and of] habits of life, modes of thinking, the perception of art objects, attitudes towards elders and relations between the sexes that would ensure optimum adaptation to the environment (1973a:50).

While signal heredity provides the predominant mechanism for transmitting these qualities of "culture" its combination with endogamy "tends to stabilize the composition of the genetic reservoir." This connects directly with three separate biological theories of a genetic role in selection and cultural transmission: (1) a bio-genetic and social transmission of niche breadth and clutch size, (Colinvaux 1984); (2) that formative causation and morphogenic fields transmit cultural information as chreodes through a canalization process, (Sheldrake 1981); and (3) a tri-dimensional model of trait transmission by the social group (ethnos) in which mutations require pref
programming for acceptance, Cavalli-Sforza and Feldman (1981). There exists a strong bio-genetic structural basis in new biological research to support the link between (1) a relatively homogenous group (ethnos), (2) both genetic and social transmission of its behavioral stereotype and (3) the strength of that transmission in regulating boundaries from within, subject, of course to external influences and the impulses of continual interethnic interaction.

Gumilev begins to demonstrate how this transmission-of-tradition process operates within a stable ethnos, one that poses no threat to its neighbors or the landscape. This latter point, though, does pose a problem, as even a persistent ethnos, having achieved geobiocenosis, may still be a threat to its landscape if the adaptation has long term consequences, e.g., swidden agriculture on a restricted land area. As to the former, either response to external conditions or a social mutation could cause a threat to its neighbors, as might also, for example, a desperate charge from a decaying swidden ecology invading a neighboring ethno-ecosystem. But leaving this issue for the time being, Gumilev associates the entire artifactual range of human culture within the ethnos-landscape ensemble, as earlier the domesticates were also included. As he puts it,

"together with its technology and its spiritual culture, such an ethnos is related to the geobiocenosis in which it represents the highest, crowning element because it is part of the cycle of conversion of the geobiocenosis (1973a:50)."

Here, Gumilev (1973a:50) argues that this process represents

"the mechanism that insures the circulation of energy among the plants and animals of a particular habitat . . . the metabolism of the ecological community of a given habitat, [and its] preservation requires that the circulation of energy be maintained and strengthened."

The prototype of ethnos is an ecologically stable whole -- in the more familiar terminology from human ecology, an ecosystem -- subject to dynamic events and environmental shifts. These processes assure sufficient mutations and
transformations, however, to trigger both ethnogenesis (inertial processes), and ethno-demise (entropic states) of both human and landscape factors in a particular subsystem of the ethnosphere.

Whether or not an ecological equilibrium or "steady state" (Odum, 1976) is ever more than a theoretical tendency remains an open question within the scientific research communities, whether microbiology or human ecosystems is the subject of inquiry. Gumilev states his hypothesis about such a state as if it were an actually existential phenomena, rather than a statistical tendency, or hypothesis. Refering to the isolated ethnocommunity, he finds that most of its energy is absorbed in efforts to prevent external hazards, and it thus lacks energy for aggressiveness, being "therefore incapable of altering the natural environment." If such an ethnos "cannot be responsible" for Homo sapiens' catastrophic devastation of nature, then, "what kind of ethnos is capable of it?" asks Gumilev. Following with a statement about the ecological destruction of America from Osborn (1948), Gumilev asks a further rhetorical question, "what has (American) history been from the point of view of interethnic conflicts." Finding it to be a genocidal path, he suggests that, "all these events took place without order and control." Citing other examples throughout the world of colonial and earlier historical penetration of landscapes by outside ethnoses that initiated genocidal and ecocidal activities against the pre-existing ethnos and landscape, Gumilev (1973a:51) skirts biologically determinism by finding that the common phenomenon of having ethnoses assumes a dynamic state in which a tremendous growth of aggressiveness and adaptive capacity enables them to adapt to new and previously unaccustomed conditions of existence.

In avoiding a determinist stance, Gumilev calls for excluding some phenomena of history from the causation of this particular characteristic of historical events. Again, he seeks a balance, drawing away from biological
determinism as much as from its social equivalent. Finding that some phenomena can be explained better by the "sphere of social awareness," while for others, "instinct" assumes a more likely fits, Gумилев stresses that it is precisely the task of scientific analysis, first to classify and then to systematize observed facts, but not to assume that the conclusions thus obtained apply to all phenomena (1973a:51).

Assuming individual responsibility for actions, Gумилев bounds intentionality with environmental circumstances which can trigger the potentialities for dynamic action, whatever course it takes. He cites the example of shifting moisture supply in Central Asia, which triggered migrations, discussed in the previous section above, which could not have been responsible for the historical and social forms taken. He generalizes to note the similarity of such events for the species as a whole. As to how many actions that are assumed to be intentional, rational choices actually fall into such a category, I am sceptical, assuming without proposing a hypothesis, that deeper subconscious motivity, operating at limbic brain and hormonal levels, may precipitate much of the collective human action leading to violence against other human beings and to the detriment of landscapes.

Delving deeper into the mechanics of an ethnogenic model driven by an energetic factor, Gумилев restates the principles of occasional escapes by a group from its normal state of equilibrium and entrophic decay. If ethnoses operate according to the laws of biochemistry, then, Gумилев defines these three states (persistent, dynamic and historical) as follows:

(1) the persistent state of an ethnos would be the case in which all the energy received from the natural environment is absorbed by internal processes and the outgo of energy is close to zero; and (2) the dynamic state would correspond to a sudden capacity for greater absorption of energy and its output [would extend] beyond the limits of the ethnic system in the form of work; thus (3) the historic state would involve a gradual loss of the ethnogenic trait -- the capacity to absorb a large amount of energy and to supply it to the outside -- as the structure of ethnos becomes simplified (1973a:52).
These proposed ethnodo states represent an analogy drawn from Vernadskiy's rather complex bioenergetic principle in which a biosphere represents:

a continuously changing totality of organisms that are interrelated and have been subjected to evolutionary processes through geological time . . . a dynamic equilibrium, striving . . . [through] time, to pass into a static equilibrium. [Its] activity creates free energy . . . that operates in the direction opposite to entropy . . . [and] capable of performing work. [Thus, the longer a system exists] in the absence of [a countervailing] equivalent phenomena, the closer [that] free energy will approach to zero (1965, 284-85).

In this formulation of an underlying hypothesis for ethnogenesis as an energetic process, albeit an "acorn-to-oak" model, Gumilev views all ethnoses as subject to these same laws of transformation, and equally to an abrupt severance and disappearance due to external factors, or of burning themselves out during their dynamic stage. Gumilev (1973a:52) concludes that

a relic, or persistent, ethnodo . . . represents . . . a crystallized form of its evolutionary process . . . and . . . a substrate for the formation of new ethnoses . . . [and] exists only because it was once formed and then passed through its dynamic and historical phases.

But this developmental process is not a simple one, it is dangerous for the members of that ethnodo, as it involves an adaptive reconstruction of "the natural environment of the regions it occupies . . . [and of] its own physiology and ecology."

Returning to the question of biological evolution, Gumilev finds that natural selection "subsides only under conditions of a stable existence, homeostasis or an equilibrium between ethnodo and landscape," which transforms into social processes of evolution. He further argues that this transformation reverses under conditions of ethnogenesis, where an energetic jolt forces readaptation of behavioral stereotypes, intensifying natural selection, as "the resulting population either dies out or forms a new ethnodo." It is not clear, however, why this is the only form of human adaptation which constitutes natural selection, and hence biological evolution. We know, for example, how diet
can change physiognomy. Gumilev has, therefore, presented a logical argument for ethnogenesis as a process involving an entire ecological complex, constituting natural selection, and hence biological evolution.

To explicate this proposition of ethnos as a evolutionary biological process, Gumilev sets out a matrix of eleven traits against the two ethnic states (persistent and historical). As the proposed primary classification of ethnoses at any particular level of formation involves comparing difference between traits in each state, these traits are claimed to be "invariant for all times and places." Here Gumilev introduces the variables of social formations and argues that different stages (feudal, etc.) of individuals or group life may exist within larger formations at different stages of development, as holdovers. Admitting both the arbitrary role of classificatory divisions and of data submitted, Gumilev proposes that they are in keeping with his task of "establishing the place of ethnic formation within the diversity of observed phenomena." Establishing that ethnogenesis is a rare occurrence, and that even then survival against either burnout or external elements is also rare, he regards these facts as the reason for the rate at which ethnoses die out and why so few survive over a long time (1500 years +/- 200 as a general maximum).

A putative analogy of the extinction of biological taxa found in paleontology (Davitashvili, 1969), which can show a gradual reduction of the biochore and a competition from surrounding species for control of it, is presented and rejected as an explatation for ethnos. Instead, Gumilev proposes the ecological maxim of stability in diversity, as an explanation for why some ethnoses do, or do not, survive:

a greater complexity of structure appears to enhance the capacity of the ethnos to resist hostile encirclement, [whereas] simplification of the structure tends to reduce that capacity (1973a:54).

Generally, however, the cause of ethno-extinction lies in more dynamic external
ethnoses which are expanding at the expanse of others, and secondarily in a kind of ethno-involution, where a relic ethnos continues slowly to decline, or "evolution with an inverse vector." The following table (fig. 7) represents those traits of ethnos viewed by Gumilev as critical to differentiating the two states of ethnos.

In concluding this geographical view of ethnogenesis, Gumilev finds that biological evolution continues within the species, transformed from phylogenesis to ethnogenesis, in which behavioral traits tend to change more than anatomical and physiological traits. But, as human evolution meant not only a demographic and distributional increase, but "an increase in the number of variations (ethnoses) within the species," and despite the number of known and unknown ethnoses,

there were no cases in which the subconscious actions of a population with a single behavioral stereotype led to intended changes in its own nature no matter what conditions existed (1973a:55).

As only adaptive processes can affect natural selection, (Haldane, 1935) they tend to work in a single direction, and that, in the case of ethnos, tends to be a decline in structural complexity resulting in a persistent ethnos. Having concluded here that ethnos represents the nexus through which human agency expresses its socially modified biological basis for landscape affecting behavior, in the next chapter Gumilev turns to historical geography as the proper framework within which to operationalize the principle and study its patterns.
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Source: Gumilev, (1972:53)
Recognizing that "discussion on the man-nature relationship has become rather acute in recent years," Gumilev sets out here to "cast a glance . . . over the present state of the problem" (1972:321). But, while participating within this Soviet disciplinary discourse, Gumilev also continues to evolve a model, advancing the "notion of ethnic creativity" as a resolution to two epistemological trends within that discourse. He identifies these points of view as

(1) a "unified" geography [that] reduces all human activity to natural laws; [and] (2) some historians and ethnographers consider all human manifestations to be social, except perhaps anatomy and partly physiology (1972:321).

Before assessing this proposition, however, we must first understand that the term "ethnic creativity" is meant to characterize those bursts of energy that modify landscape, destroy old and create new communities of people and then gradually fading away, end up by resembling, in V. I. Vernadskiy's [1944] words "geological upheavals on a small scale" (1973a:321).

Therefore, we must now take into account a third viewpoint, that of synthesis, or a dialectical resolution of the underlying contradictions in the first two "trends." This synthesis, represented by Gumilev as the factor of ethnic creativity, introduces a biosocial perspective, in that,
anthropogenic process are shared by manifestations of both the social
and the natural (mechanical, physical, chemical and biological) forms
of motion-of-matter. . . [and] strikes this author [Gumilev] as the
only proper and fruitful approach (1972:321).

In fact, Gumilev (1973a:322) keeps the argument well within the fundamental
tenets of Marxism, and acknowledges

a constant association of all forms of motion of matter not only
within large groups, such as ethnoses, which exert a direct impact on
terrestrial landscapes and therefore exist not only abstractly, but
in complete reality, but also within a single human individual.

Likewise, Gumilev (1973a:322) recognizes that,

While all aspects of human behavior may be dictated by man's social
environment, the genetic code of the embryo is a biological phenome-
na, and the increased secretion of adrenaline a chemical phenomenon:
. . . [all of which] affect the character of human behavior.

In confronting the two theoretical perspectives, Gumilev finds it implausible
that either natural or social laws can singly account for all the effects of
human agency, ergo, an integral interaction of all forms of motion of matter
within both social and natural spheres of action, and at all levels of human
aggregation. Therefore, a co-regulation of the biosocial must occur both in
the individual organism, and by extention, through the transmission of a beha-
vioral stereotype (a habitual, or traditional system) within the ethnos. But
just how this transmission travels upward through the larger aggregate levels
of ethnic organization, is explained later under the framework of a modified
general systems theory.

At this juncture in reading Gumilev, I would expand his cautious bio-
social modelling of human behavior, as expressed through an encompassing eth-
os. Admittedly having access to both more current material and a wider base
of research data, unavailable to Gumilev at the time of his writing, not to
mention political license, eases a stronger claim for the biosocial approach.

Nevertheless, we can follow Gumilev's argument and state that any ethnic system
could be interpreted as having evolved from a relatively active and identifiable bio-core, and together co-generating a set of behavioral practices with elements of each successive population. These elements would then have entered into a co-adaptive relationship with that encompassing environment. As leading elements within that population, the nucleus would then have evolved a set of behavioral characteristics (traditions), also transmitted on to its descendants, and, to a certain extent, diffused throughout the larger population. Under conditions of crisis, this ethno-core would exercise a hegemonic relationship over the general population, and its behavioral characteristics would come to characterize the entire population and its encompassing landscape, as transformed through those characteristic practices. What remains to be articulated in completing this model are: (1) how the process by which the initial "spark" of adaptive behavior occurs; (2) the mode of transmission; (3) the reason for differences between dynamic and static forms of this process; and (4) the cause of demise for any such ethnic system. In this chapter, Gumilev focuses primarily on the initial, or ethnogenic, processes, discussing them from the point of view of both a geographical and biosocial synthesis.

Turning now to Gumilev's discussion of the second (social) line of theoretical reasoning, the technosphere cannot be viewed as developing through the laws of nature, except where physical constraints apply. Rather, according to Gumilev's (1973a:322) interpretation of Kalesnik's (1968) definition, all man-made tools, garments, dwellings and works of art [material artifacts] are excluded from the cycle of conversion in a biocenosis because they lack the capacity for independent development and can only decay. [And thus], the constant renewal and expansion of the earth's technosphere are the fruit of a distinctive form of development of matter, the social form, which is not inherent in any animal.

In this definition, Gumilev finds that the term "technological evolution," is a misnomer, but two further questions are raised:
(1) where lies the boundary between social and natural development within the ethnos? And (2) what role is played in this association by the energetic aspect, which has an equally important bearing on both nature and society? (1973a:322).

As to the former of these questions, it must be restricted to ethnos, otherwise, confusion could easily arise from the spectre of genetic engineering and certain technological practices which come dangerously close to contradicting Kalesnik's view that these artificial phenomena cannot develop independently. This is, however, not the same thing as "evolving biologically." Therefore it is the latter question that Gumilev addresses, as it focuses on two parallel yet interactive energetic processes that generate development. What then, he asks, is the connection between development in an ethnos of "social institutions" and in "biological features."

In order to refine this thesis, Gumilev now undertakes to demonstrate the interactive presence of the dual elements of change within an ethnos, i.e., of both social institutions, which evolve in the social form of motion of matter, and biological features, which account for the stability and variability of the ethnos as a population (1973a:322).

Furthermore, while "both groups of phenomena supplement each other," they leave a "gap which is filled with that very energy which shapes landscape and ethnogenic factors." This form of "free energy" gives rise to ethnogenic events, and was identified by Vernadskiy (1944:284), as the "biological energy of living matter in the biosphere capable of performing work." A similar energetic phenomena of the same name has also been identified by von Bertalanffy (1968) as a component of systems, and as a factor in evolution by Alexeev (1966), while Gumilev (1970) previously discussed it as passionarnost, or "innate drive." The role of passionarnost, as found in the phenomenological space between the two forms of motion within an ethnic history, needs demonstrating. Hence, the following six points set the pattern for an operational
proposition that can be compared against empirical generalizations to account for Gumilev's resulting conclusion. First, Gumilev claims that his analysis of the interaction between ethnos and landscape has shown that although they are linked by a feedback relationship, ethnos cannot operate as a constant landscape-shaping factor and landscape alone cannot induce ethnogenesis (1973a:322).

Even though propelled by innate drive, the feedback interaction between landscape and ethnos cannot account for the triggering mechanism, although a recognition of this linkage process is crucial to understanding the model. But if the basic premise is clear (that feedback links landscape and ethnos), then the second question, (what is necessary to induce ethnogenesis), is not. In this regard, Gumilev (1973a:322) finds that as for the relationship between ethnic and social aspects, a feedback is actually excluded here, because the earth's ethnosphere represents only the background, and not a factor in social development.

The problem of reduction rises again with the third point, as the anthroposphere is not reducible to a set of biological regularities. Moreover, if we assume social laws -- either historicist-developmental or gatekeeper -- then the fourth point is clearly demonstrated. That is, an ethnos cannot be likened to an organism because an organism functions independently of all social laws, while the ethnos is in constant interaction with those laws. An organism by nature gives rise to a new generation and then dies, while there are persistent ethnoses that vanish only as a result of extermination [by external causes] . . . (1973a:322).

Moreover, the fifth point is self-explanatory in that "each ethnos is unique" or non-reproducible. That is, although each individual (H. sapien) organism may be unique, and despite its constraining physiology and morphology, it has the potential to reproduce itself, whereas an ethnos does not. Implicit here, is an understanding that the transmission of ethnic rhythm or behavioral stereotype is non-genetic, but rather incorporated into the central nervous and
endoctrinal systems as patterned responses of electro-chemical energy to external stimuli. The sixth point merely recapitulates the premise that ethnos is a specific, bio-social human construct, identical neither with race nor with society. As it extends beyond an interactive biological field, it likewise lies within the historical process, and depending on many outside causes, interacts with a wide diversity of social phenomena, and "ultimately forms a superethnic culture" (1973a:322). Despite its crucial role in the model, Gumilev's has not developed the concept of superethnos in his preceding discussion. It appears later in his work (cf. p. 317) as the highest level within a taxonic system of ethnic units, and is introduced here only through its cultural attributes.

Clearly the issue of culture must be confronted at some point, even though Gumilev barely raises the problem of its role within the ethno-landscape system. As pointed out in the previous discussion of Soviet ethnography (cf. p.255), the contradictory meanings attributed to "culture" in Western and Soviet discursive systems makes it difficult to define Gumilev's work as cultural geography in a manner acceptable to both. But, if his work can be legitimated as cultural geography in Western terms, then it not only becomes situated in a new context, with an expanded referential field, but also solves one of the main problems addressed by this research. That is, what theoretical and operational validity can be assigned to Gumilev's model beyond its development of categories exclusive to the Marxist discourse. In order to translate Gumilev's theories to a more "universally acceptable" field of discourse, requires, however, that a common definition of the properties of cultural geography must be established. To do so, we turn to a well established definition of cultural geography as a praxis. According to Wagner and Mikesell (1962:1), cultural geography contains five themes -- culture, culture area, cultural landscape,
culture history, and cultural ecology -- and thus

the study of . . . man-made geographic features takes account of the

differences among the human communities that create or have created

them and formulates the special ways of life of each (1968:1-2).

Therefore, cultural geography identifies phenomena and processes analogous to

Gumilev's construct of specific ethno-spatial territories within an "anthropo-

sphere" created through an amalgam of landscape and ethnos. Furthermore, in

Wagner and Mikesell's words, it

distinguishes, describes, and classifies environmental features character-

istic of a given culture . . . and what role human action plays or has played in creating and maintaining [them] . . . [and] distin-

quishes, describes and classifies the typical complexes of environ-

mental features, including man-made ones, that coincide with each

cultural community . . . [it] looks behind them . . . for origins . . . and the specific processes in which human manipulations of the

environment are involved (1968:1-2).

While wary of too facile analogies between intellectual systems (in particular

at this point in the assessment as the whole ethnogenic model has not as yet

been fully presented and explored), a number of implicit and explicit correla-

tions found here could incorporate ethnogenesis as a sixth theme of cultural

geography. As such, this theme could provide a causative solution for many

problems in the other themes. Moreover, without delving too far into other

definitions of culture, let us look at Gumilev's definition, as "borrowed" from

the Polish philosopher Stanislaw Lem, and how he applies it to the superethnos.

Strictly speaking, Gumilev presents a rhetorical question as posed by Lem

(1969), and yet it certainly suffices for a definition of culture, in that, if

culture is a function of physical, biological, social and technical-

economic factors, [and] if all these determinants were to be of equal

magnitude, would the space of purely cultural variation become zero, or would there still remain a zone of freedom? Comparative anthropo-

logy suggests that such a space does exist and that it displays a

purely cultural variability of forms and ideas (1969:51).

That "zone of freedom" provides Gumilev's concept with the same gap as found

between the social and natural motions of matter that interact within an
ethnos, and which is filled by "free energy" that he equates with innate ethnic drive. But here, that analogous space would be filled with an energy of intentionality, comparable in properties to the same energy represented as passionarnost and evidently with the actions of people endowed with the right and the possibility of freedom of choice. That may be so, but actions, which in their physical meaning, constitute work, require energy refracted through the psychophysiology of the individual, i.e., that very innate drive. In other words, if we were to compare the social and biological aspects to two sides of a coin, (heads and tails) the innate drive and its manifestations would be the actual metal of on which the various figures are imprinted (1973a:3233).

We are provided with a very interesting proposition about culture. That is, culture is the function of converging factors which leave an open centre wherein intentional activity on the part of each individual is enabled through psychophysiologic aspects of the organic process. Equating this activity with innate drive, locates it within the hypothetical space between bio-social elements of the psychological manifestations of cultural interaction among individuals. By implication, this "shared phenomenon" of culture, or behavioral traits, may be the property of an ethnos, but operates within a communications field at the individual level in response to dyadic encounters. While we now have a definition for the function of culture and an understanding that its properties and variability exist as an energetic aspect of a communications field, an absolute definition of culture must come later, or be accounted for by deduction. Certainly, the Soviet ethnographic definition presented by Gellner (1980) would not seem to apply to the way Gumilev uses the term in connection with superethnoses. Therefore, I propose that functional definition of culture (i.e., from Lem via Gumilev) be equated with the Wagner and Mikesell definition, and be accepted as a bridge between that discursive understanding and a Marxist philosophical meaning of "spiritual culture." For the time
being, however, we must leave this point until reencountering the superethnos at a point where it is discussed in more detail, and where Gumilev discusses culture at that level within a hierarchical taxonic system.

To provide support for his propositions, Gumilev undertakes a complex argument for the advantages of empirical generalization over direct observation, which only gives information about the figure and not the ground. Or in referring to the preceding analogy of a coin,

it gives information only about the figures, which do not reflect the character of the enclosed filling (say, the ratio between elements of the alloy used in minting the coin). [As] an understanding of deep-seated phenomena can only be gained through empirical generalization. Therefore any argument about what is more important, tail or head (in our case a "unified" geography or an all-encompassing sociology), is actually without substance (1973a:323).

Moreover, from this reasoning, he concludes that such an argument is not constructive because in either case there seems to be an unconscious desire to simplify the problem facing scholars, i.e., to achieve a certain debasement in which the actual investigation loses its sense since its result will obviously be incomplete and therefore untrue (1973a:323).

In regard to this latter problem, Gumilev proposes an approach that would achieve an "understanding of the situation" through an analysis that does not ignore particular components of the phenomena that do not fit a pre-conceived framework, but by establishing the place and role of each component. This will ultimately lead us to the synthesis that is the purpose of the investigation, and it will then become clear that any conflict between the social, biological and geographical approaches is in fact imaginary (1973a:323).

Having taken "a giant step" in contesting the various deterministic methodological lines encountered, Gumilev proposes a crucial test. That is, if the scale is reduced to that of a single individual human being who belongs to a particular ethnos, would we be able to distinguish any differences "between these aspects of human life," i.e. his embodiment of anatomical, physiological and psychological processes. These phenomena are so closely linked as to be
indistinguishable, and Gumilev (1973a:323) concludes that

Man is evidently a social being since his personality is shaped through constant intercourse with other people and with objects created by his forebears (technology). But then how about a spermatozoon? That individual is purely biological. And yet there is no doubt that man's personality is linked to his own embryo, so the human body, including higher nervous activity (the psyche), in effect, represents a laboratory combining the social and natural (mechanical, physical, chemical and biological) forms of motion of matter.

Gumilev then finds that following birth, the human organism continues to be subjected to natural processes, i.e., of sexual maturity, aging, etc., which depend more on inherited characteristics, "elaborated in the process of species evolution," than on a society's level of development. Since inherited traits certainly affect behavior, they represent, in Gumilev's view, a continuation of previous adaptations, and thus the origin of those differences,

is undoubtedly related to the adaptation of the ancestors of particular populations to different geographical conditions and to the formation of ethnos, both past and present. It is the accumulation of characteristics produced as a result of long-term processes of adaptation that give rise to ethnic diversity, as mankind passes through levels of development, or socio-economic formations (1973a:324).

These levels of social organization, however, are developed by the species as a whole and, as Gumilev argues, the formation of ethnos conforms to biological conditions of natural selection, and hence to adaptations resulting in genetic mutation. But, in addition, ethnos also serves as a repository for certain "pools" of those traits, and thus provides a vector for ethnogenesis. Therefore, in stressing this biosocial character of the individual, Gumilev's point seems directed against theories of an independent social development determining human organization and behavior, i.e., social determinism.

On Taxonomy and Internal Structure

Contending that ethnology has a unique object of study and approach, Gumilev proposes a simple, but universal, primary taxonomy for differentiating
its units and reflecting its dynamics of development, as these units are "processes rather than staple magnitudes." He further calls for it to "flow from our postulate ... [stressing] the deep-seated character of the phenomenon." In line with this taxonic approach to its characteristic units, "every ethnos is distinguishable by a particular internal structure that manifests itself in the nuances of disposition of social groups." These features cannot simply be equated with social classes, despite the co-presence of social forms, and so an ethnos may even occasionally be undifferentiated in its simplified structure during a late stage of decline. If, however, ethnos were merely a social phenomenon and hence accessible to understanding by a branch of sociology, then, Gumilev (1973a:324) argues that "all societies of a particular socio-economic formation would behave identically." This is not true historically, because "social similarity does not destroy ethnic originality."

Addressing the question of what brings a group of individuals together as a people, Gumilev contends that as an ethnos represents a particular case of natural selection. As such, it does not "coincide with either a particular social level of development or with a spiritual or material culture," and he defines the mechanics of ethnogenesis as

the emergence of an ethnic entity out of a group of individuals of mixed origin, differing levels of culture and different abilities, [there is evidently, not] any conscious intent or a striving toward particular benefit since the first generation endowed with that innate drive faces tremendous hardships in seeking to overcome existing relationships and to establish a new set of values (1973a:324).

Ethnogenic processes, however, are always risky to initiators who seldom survive to reap the rewards. Furthermore, if as Gumilev contends, "a new ethnos always destroys the social institutions of the old," then an attraction derived from the "principle of social proximity" could not apply. Therefore, the formation of a people as ethnos can only be a biosocial synthesis.
After negating the preceding principles of social and biological determinism as potential explanations of the attractive mechanism for ethnogenesis, Gumilev concludes that the principle of complementarity, "involving a subconscious mutual attraction among individuals," provides the most appropriate, explanatory vehicle. While there are many analogies to this "subconscious mutual attraction," they are found for the most part in the literature of anthropology and social psychology, e.g., Czikszentmihalyi's concept of "flow" (1979); E. T. Hall's (1984) or V. Turner's (1985) interpretations of Jung's "synchronicity"; etc., most probably not accessible to Gumilev at the time of his writing. We might view Gumilev's definition of complementarity as situated between these and more strictly biological approaches, the closest comparison probably being Chappelle's (1970) use of "complementarity" to describe a resonance in rhythmic interaction. Therefore, this principle of complementarity, however restricted its sources or use, provides Gumilev with a new definition of the ethnogenic attractive mechanism, as follows:

> the main role in the formation of the primary group, the embryonic ethnos, is played by an unconscious mutual attraction among people of a particular type. Such an attraction always exists, but when it is intensified by an ingate drive, the prerequisite for the creation of an ethnic tradition is provided. And this, in turn, is followed by the creation of social institutions (1973a:325).

In fact, this new definition provides the most important integrative and potentially operational statement of Gumilev's thesis up to this point in the available data. If we equate "recognition" and "mutual attraction" we have a strong paradigm for ethnons, for the addition of "rhythm" as the active component places Gumilev's model within the framework of biosocial communications research as interpreted by an "interactive rhythm" school, (Davis, 1982; Hall, 1984). Though a number of issues can be raised from this discussion, the most problematic seems to be whether or not the new ethnos destroys the old
social institutions. Gumilev cites a number of communities -- Romans, Vikings, Mongols, early Muslim, and Christian -- as examples of an ethnogenesis that creates new social structures through destroying the old. But, if this were the case, then why did so many features of the previous "civilization" or social ecology remain within the new, evolving ethno-cultural structure. In the case of Islam, for example, most interpreters have argued that it merely rearranged the framework within which old and new sets of traditions continually merged and expanded, rather than initiating an entirely new social system. Not to devalue the principle of complementarity, however, I argue that such an "epistemological rupture" (c.f. Foucault, 1984) need not cut through all the existing fibres of a social warp in order to create a new ethnogenic adaptation and set of social structures.

We can now introduce Gumilev's taxonomic model based on the evolutionary development of a dialectical synthesis between complementarity and innate drive. The primary level, "consortia," involves a social convergence of individuals (a consortium) around an elementary focus of mutual attraction. Gumilev does not expand on whether individual charisma, ideological agreement, or situational proxemics are necessary elements within the process at this stage of its development. But he implies an intentionality that parallels complementarity as a common denominator, as "having begun to act, they [the consortium] enter into a historical process, woven together by their chosen aim and historical destiny" (1973a:325). Citing several further examples of these embryonic associations, Gumilev finds that most of them do not survive, but rather "break up while their founders are still alive," indicating the usual transitory presence of a charismatic individual or state of flow as experiential praxis. As those consortia that do persist in spite of external forces enter into social history and assume social forms and traditions, their members will
to preserve an inertia of attraction towards one another in the form of common habits, tastes, perceptions, etc. This form of complementary association may be called a convixium (1973a:325).

The second stage of the taxonomy -- convixia, or a common way of life -- represents a transition from a purely social phenomenon, to an ethnic (hence, natural) phenomenon, even though it is not strong enough at this stage, "to exert an influence on the environment." Gumilev (1973a:325) views its dynamics at this level as qualified, in that under favorable conditions, convixia tend to be stable, but in general their resistance to the environment tends towards zero, so that they ultimately become dissolved among surrounding consortia.

This model establishes the initial stages of an ethnogenic process (ethogeny), but perhaps, it would be well to rephrase the definition of ethnogenesis at this point before moving on to taxonomic procedures. The primary group (the consortium), an embryonic ethnos drawn together by complementarity and intensified by innate drive, forms traditions and social institutions; the former are transmitted as behavioral stereotypes and reinforced by the latter. This process involves a two-way adaptation -- of the landscape, and to it -- and results in natural selection through mutagenic and metamorphic change in the ethno-landscape ensemble -- inclusive of an ethnos and its domesticates. Together with the expanded ensemble of sociotechnical and cultural artifacts and practices, the ethnos enters into the geobiocenosis, or cycle of metabolic conversion. Finally, a tendency towards endogamy insures a stable transmission and adoption process. The process taken as a totality also ensures boundary maintenance. Nevertheless at any point external factors could exterminate or weaken the ethnogeny to the point of demise, or to a persistent state which, as entropy prevails over time, will eventually occur in the natural life cycle of an ethnos. There is currently in social science, a general criticism and rejection of any so-called "lifecycle" model, but this appears to be only a
matter of fashion analogous to the geographers blanket rejection of environmental determinism; for as Rostlund (1962:49) pointed out in regard to that theoretical ensemble, "environmentalism was not disproved only disapproved."

Following the reformulation of Gumilev's ethnogenic model, we cannot as yet operationalize and test it against the empirically generalized data, as not only is its taxonomy incomplete, but the linking mechanisms between levels have not been introduced. Gumilev further emphasizes that the principle of complementarity is found in other species, and is thus not a distinctly human trait. Therefore, among higher species in general, complementarity plays a leading role only in the absence of social forms of existence within a group, but it retains a subordinated role even in the presence of stable social relationships (1973a:326).

But, if complementarity is not the leading factor in societies with complex social structures, then what is? Gumilev leaves us in the dark here, as he returns to the biological factor, commenting on its essential role in ethnos.

The essential heterogeneity of ethnoses, which far outnumber races, and their non-commensurability with race, have already been stated, i.e., racial anthropology deals with variations in human physical types, while ethnology deals with behavioral stereotypes among groups welded together by a common destiny, [i.e.] the cause-effect relationship of historical events (1973a:326).

In this way, Gumilev finds ethnoses manifested in socio-historical forms that can be observed and used as data for doing ethnography as a natural science. But a problem remains with his "cause-effect" model. In general, it has been overwhelmed by a possibilist paradigm it remains an option in current Western academic practices. In reading Anuchin's (1969) progressive thesis of Soviet geography, his scathing critique of possibilism as an idealist stance against a more determinist, hence materialist, geography would indicate that Gumilev works within a tradition which values determinism, although not
environmentalism. It remains to be seen whether Gumilev is breaking new
ground, or reinterpreting an environmentalist position in new terms.

Locating ethnos within biology, Gumilev (1973a:326) finds that its
roots lie deep in Vernadsky's construct of the biosphere, its energetic source
being the "fluctuations in the energy of living matter which manifests itself
in a direction that is the reverse of entropy." But in describing ethnos as an
energetic process, Gumilev (1973a:326) makes an important statement, in that

this energy, when refracted through the nervous activity of the
subconscious, effects changes in the vector of metabolism and pro-
duces the psychic effect that we have called innate drive.

In fact, not only the genesis of ethnos as a system, but its entire lifecycle,
potential for expansion, and inevitable decline, as well as its cohesive,
internal structure as a whole entity, rely on this factor of innate drive. How
does one demonstrate, first, that such energy exists; second, how it is refrac-
ted through the nervous system; third, how it effects changes in the metabol-
ical vector; and lastly, how it produces a psychic effect. But not only do we
have to ask the question of mechanics, but of manifestation. That is, can it be
observed, so as to establish its phenomenological existence before inquiring
further into its mechanical structure and causal chain of linking effects. In
claiming that "bursts of such drive . . . tend to create changes in populations
and lead to the formulations of specific groups . . . called ethnoses," Gumilev
admits that "the possible causes still require further analysis." A conclusion
about whether of not he has come up with sufficient proof of this energetic
model and process will have to wait until the end of this thesis, when we have
completed the analysis of Gumilev's entire theoretical construct, and attempted
to test it against empirical observations and generalizations.

The question raised here also concerns whether Gumilev is doing
history as biology, or biology as history. Certainly, we can see a dialectical
method throughout his entire range of discourse, and not only a deterministic stance, albeit there is an attempt at a synthesis of natural and social theory and fact, but also an attempt to operationalize ethnos by proving its phenomenological existence in the "real world" rather than as only a heuristic construct. Keeping within those intentional parameters, or at least my interpretation of them, we continue to follow Gumilev's stated task:

-to establish the character of the correlation between ethnogenesis -- as an elementary phenomenon with an energetic basis -- and the spheres of history and biology that border on ethnogenesis (1973a:327).

His method of discovering ethnos through its historical manifestations in recorded, dynamic conditions of human activity has steered away from, but not abandoned, the earlier connections to climate and environment as evidence both of external factors effecting ethnogenesis, and of indicators of ethnic response. How else but through an integrated, biosocial historical-geographic method could one trace the fleeting life of many ethnoses, some of which have been exterminated in their birth by this overwhelming energetic pulse; or others that having adapted to this energy and having made an adaptive mark on the landscape, then fade from existence with the entropic decline of that energetic source, their remaining members scattered among surrounding, more dynamic ethnoses, or surviving as an obscure, relic form. As Gumilev (1973a:326) puts it, the findings of historical geography provide

the criteria for our investigation . . . [which allows] us to describe the character of the dynamic relationship between ethnos and landscape and thus to establish that ethnos is not a moribund category, but an objective reality with its inherent regularities.

The four phases of ethnogenesis constructed by Gumilev can never, of course, be an objective reality, constituting rather an important heuristic device to augment the theory of ethnos as an objective reality. But they can suggest the character and direction of these metamorphic processes shaping the
ethnosphere's observable diversity. Four factors are also suggested as possible causes for the extinction of an existing ethnos: (1) entropy, or a gradual decline to a stasis between its human component and respective environment; (2) a sudden jolt from an external factor such as climatic change, disease or war and conquest; (3) natural selection and gene mutation; or (4) interbreeding. We now turn to the latter two which bear closer examination.

According to biologist J. B. S. Haldane (1935:71,82), not all effects of natural selection "make an individual more suited to the fight for survival," as its adaptive success begins to break down when a larger population density involves conflict; a struggle among its members, resulting in benefits to some individuals, but not necessarily to the species as a whole. Moreover, any adaptive modification tends to reduce structural complexity, and thus, "may weaken the species in the struggle for survival," (1973a:327). Here we can see the life cycle model of a species in the same light as Gumilev's adaptation of it to ethnos; a general entropic and simplification model. On the other hand, we can observe species whose long-term adaptation has both simplified and succeeded, e.g., the shark, crocodile or ginko tree; or others that have diversified for success, such as the cockroach, rat and Homo sapien. This fact, however, does not negate the principle that not all natural selection is beneficial. Furthermore, how does this affect human beings and in particular ethnos? The answer will develop within the following discussion.

When applying to mankind the principle that natural selection has a dual potential to effect population, i.e., beneficial to individuals at a cost to the species, Gumilev finds that neither of these effects holds true for society as a whole since the social form of motion of matter produces a techno-genic sphere that is incapable of natural self-development, and therefore, of degeneration (1973a:327).

In a manner of speaking, this proposed division between nature and society, (an
axiom of Soviet orthodoxy followed by Gumilev), conflicts with what Paul Heyer (1982:26) finds to be Marx's view that "the development of human technology, was an extension of the development of nature's organic technology." Nevertheless, Gumilev (1973a:327) points out that, in the case of individuals, "the creative forces of the members of a society tend to find expression in culture, architecture, works of art and even scientific treatises." But, in terms of the population as a whole, or as members of an ethnos, they continue to interact with nature, tending to expand their habitat or to maintain a homeostatic equilibrium, and lose their characteristic features, i.e., the abilities of their ancestors, good or bad (1973a:327).

Therefore, in addressing human agency as an phenomena expressed as a particular ethnic style by individuals acting as a population and a social entity, Gumilev finds a dialectical 'pas-a-deux' between social and natural forces, "like a unity of opposites" traceable through parallel, and evolving, ethnic and social histories. On one hand, the natural evolutionary process of ethnic development and its adaptive "style," has assumed distinctive forms by turning from phylogenesis to ethnogenesis. [Then] natural selection retained a highly important role in this process, as a stabilizing factor tending to remove extreme individuals from the population and reducing its genetic diversity (1973a:327).

Moreover, not only was stability further insured by transmission of ethnic tradition through the mechanism of signal heredity but, as Gumilev has already claimed, it was reinforced by speech acts as a secondary signal system. He concludes that this combination of factors provides grounds for viewing the earth's anthroposphere, including man-made technology, domestic animals and crops as an entity (though a mosaical entity, because of its ethnic diversity) in two aspects: social and natural. Any attempt to substitute one of these aspects for the other constitutes virtual profanation that is condemned to failure when actual data are interpreted (1973a:327).
As Gumilev applies the principles of natural selection to an ethnos, he finds that ethnos has a dual character. First, it would inherit characteristics of potential fitness, and enable its energized members to lead the population in adaptative expansion, a factor which held equal potential of success or disaster. Second, it could disadvantageously inherit a weaker energetic potential that would restrict the ethnos to a static co-adaptation with its landscape. This latter character of an ethnos, "homeostatic equilibrium," presents a problem addressed in ecosystem studies (cf., Bennett, 1976; Brooks and Wiley, 1976; Hardesty, 1982; von Bertalanffy, 1968), and discussed later. In addressing this problem, however, if we look beyond a simple physical system for a homeostatic equilibrium in nature, we will find it only as a statistical approximation, an abstraction, whether in a simple desert ecosystem or in a complex urban system of Homo sapiens. Therefore, dynamics of change in the biosphere rules out any sustained equilibrium in which each element sustains an equal transformation of energy and matter that results in a cessation of circulation. Moreover, as von Bertalanffy (1968) defines homeostasis, it is the ensemble of organic regulations which act to maintain the steady states of the organism and are effectuated by regulating mechanisms in such a way that they do not occur necessarily in the same and often in opposite, direction to what a corresponding external change would cause according to physical laws (1968:17).

The problem here, as von Bertalanffy points out, is that contrary to a closed system, any biological or organic system is axiomatically "open," and as such, will attain a steady state in which its composition remains constant, but in contrast to conventional equilibria, this constant is maintained in continuous exchange and flow of component material. . . Furthermore, open systems show thermodynamic characteristics which are contradictory to the second principle. . . . [as] the general course of physical events (in closed systems) is towards increasing entropy, leveling down of differences and states of maximum disorder. In open systems, however, with transfer of matter, import of "negative entropy" is possible. Hence, such systems can maintain
themselves at a high level, and even evolve toward an increased order and complexity -- as is indeed one of the important characteristics of life processes (1968:18).

But, while Gumilev makes a case for homeostatic equilibrium as one potential in an ethnosystem, we cannot view it in terms of closure. That is, homeostasis in an organism represents a transitional state from which the organism can change. At the point of death, however, it undergoes a transformation from a level of negentropy (order) to entropy (chaos). As the system "shuts down," its elements transfer to other systems and through a continuing exchange of matter and energy becoming decomposed and recycled, its extinction complete.

Turning to this concept of homeostasis at the level of the species as a system, Gumilev proposes that it represents a dormant state which leads either to the biological extinction of that species, or its potential reemergence as a new life-community or phylum. In the first instance, extinction would result in absorption of the species by other surrounding environmental entities, as added energy for their biocenosis. In the second case, the transformation of a species as a system would involve a mutation of its total entity, its genetic and phenotypic elements, and reemergence of some of its elements as a more dynamic system. Other remnant elements, not included in the mutational transformation, would probably suffer the same fate as in the first instance. Therefore, a process of natural selection would operate either in response to, or generating, niche diversification. What Gumilev proposes is an multivalent analogy, on one hand between ethnos and species, and on the other hand between an ethnos and an ecosystem.

Now, in constructing a model of ethnos based on human ecology and systems theory, Gumilev has proposed that ethnos is inclusive of landscape, its reciprocally adaptive environment, and encompassed by that landscape, stating:
We thus have grounds for viewing the earth's anthroposphere, including man-made technology, domestic animals and crops, as an entity (though a mosaical entity because of ethnic diversity) in two aspects: social and natural. Any attempt to substitute one of these aspects for the other... is condemned to failure when actual data are interpreted (1973a:327).

Therefore, to prove that "social forms of motion," differ from "natural" processes, Gumilev concludes that: (1) the anthroposphere is a system with a dual nature, its material technology as potentially "closed" elements, and its biological components as potentially "open"; and (2) the human species, is a biological component of that system, albeit distinct from its associated domesticated plants and animals. And yet, Gumilev shies away from viewing "social" elements as being built upon the biological, as we might assume from Heyer's (1984:224) statement that, in Marx's evolutionary view, history is equivalent to the development of human technology, which is no more than "an extension and development of nature's organic technology." Or for that matter, what is the analogy between the social and the technological as a single artifactual entity produced out of man's organic life? Then too, if the anthroposphere, as an integration of mankind's natural way of life and its artifactual extensions, is a product of natural selection, then the only problem in applying a unified theory would seem to be where to situation "consciousness." It is this element of the "social" which restricts Gumilev from proposing a single, naturalistic ecological model. The problem seems to fall within a Soviet orthodoxy which ignores any other "reading" of Marx. But as Heyer points out, the situating of individual consciousness in a "social reality" extends beyond Marx to his contemporaries, including Darwin, who saw social evolution as the result of a rapid, biologically based behavioral evolution strongly aided by the inheritance of acquired habits, Marx offered an explanation based not on the direct biological evolution of individuals but on the interaction of forces of production, social organization and ideology (1984:146).
But, as Heyer points out, Darwin modified his position in the case of altruism, to view natural selection as "operating at the family rather than the individual level." Heyer's next statement touches the foundations of Gumilev's emmeshment in controversy over social and natural divisions, in that,

Marx insisted that human society is inextricably linked to nature and natural processes, [whereas], for Darwin, man is and always has been a social animal, [and thus, Darwin] had a similar vision of the social as natural . . . [that] the universal social tendencies of the species, become differentially expressed as they are constrained by particular historical circumstances (1984:146, 224).

The problem, however, is not simply how to legitimate the natural basis of man's social nature, or "that natural science understanding can and should inform the human disciplines," as Heyer (1984:226) concludes. Rather, any reformulation of the problem must address social nature as also incorporating the individual as well human consciousness. In light of this prospect, several problems arise in Gumilev's theoretical construct.

The problems in Gumilev's approach lie in his ideologically restricted use of a full synthesis, whereby the social dimensions of human consciousness are interpreted as a subset of mankind as a natural, biological system. But we must continue to understand the constraints under which Gumilev operates in a Soviet scientific system that places its own attenuated Marxism as an obstacle to open discussion of Marx's ideas, to pursuit of knowledge, or hence, to an unrestricted advancement of science. The separation of the social aspect of consciousness from a biological base, represents a Soviet orthodoxy that restricts exploration of the biosocial frontiers now being challenged in the international arena of human sciences. As Heyer points out, the legacy of idealism and the nemesis of social Darwinism also plague a free expression of biosocially oriented scholarly and scientific research under the best of academic circumstances. Would Gumilev then modify his thesis if not constrained by
this "ideological" division of the social from the natural? This question cannot, of course, be answered. But in the conclusions drawn from this research, I will make some comments on Gumilev's model in relation to potential influence from current knowledge advanced by biosocial research as an active frontier in contemporary human sciences.

One question arising here which can be addressed is Gumilev's contention that natural selection "tends to stabilize the ethnos... to remove extreme individuals from the population... [thus] reducing its genetic diversity." Fairly crucial to his theoretical construct, this proposition would seemingly contradict the general ecological maxim that "increasing diversity increases stability," (Dasmann, 1978; Odum, 1982; Hardesty, 1982). True, complex systems such as the anthroposphere, insure effective communications through redundancy, a prerequisite for both maintaining optimal stability and undertaking necessary adaptation. But, if these stabilizing and adapting processes are meant to be in some sense teleological, does that automatically mean a creative and directive force -- cosmic intentionality -- and exclude either randomness, or a purely interactive, bio-geo-chemical causation? I think not, as in Gumilev's formulation, the model of ethnos is presented as a system of interdependent, parallel and inseparable processes of natural elements (implying evolutionary natural selection), and social factors (implying cognition and intentionality). Therefore, although establishing the natural aspect of ethnogenesis, Gumilev's use of the notion of intentionality seems contradictory as he treats "purposeful behavior" as a natural factor in ethnogenesis, rather than a social factor in the stream of ethnogenesis as a primary human activity. Gumilev reiterates that if ethnogenesis requires an energizing burst to jolt people out of a static ethno-landscape situation, then it correspondingly necessitates:
a powerful effort on the part of a certain number of people who are prepared to break with old stereotypes of behavior and to establish new values, often at the cost of their own lives. The capacity for such purposeful activity we termed an innate drive [passionarnost] and interpreting it as "a fluctuation of the biogeochemical energy of living matter" as described by V. I. Vernadskiy. From the biologist's point of view, such innate drive would be a characteristic, and moreover an inherited characteristic, as demonstrated by the course of the process of ethnogenesis (1973a:327).

Here, Gumilev concludes that innate drive and the bioenergetic fluctuation "are so similar as to lend themselves to the building of a model." It is not clear, however, whether he differentiates between innate drive, "bioenergy," ethnogenesis, or inherited characteristics. Perhaps this ambiguity may be attributed to problems in editing and translation, although it seems that Gumilev, having established the equivalency of these phenomena, has not seen fit at this point in his argument to correspondingly define their differences. And yet, as we are given to understand that ethnogenesis requires "purposeful action" that can be inherited, or transmitted through "signal heridity." This process would then imply both a teleological cause and an intentionality on the part of certain individuals who exercise a conscious intent to change their way of life and to form a new ethnos. But an ethnos, although encompassing phenomena attributed to the social form of motion of matter, is already defined as a natural entity. If, however, intentionality is by definition a "social" and not a "natural" phenomenon, how then does Gumilev account for this contradiction in which the an ethnos arises out of natural processes including purposeful behavior, and is not socially, or consciously, choreographed? Do we, however, inherit the necessary biogenetic traits for that "extra energetic" effort required to break old, habituated behavioral patterns, deeply embedded within adaptive landscape formations? Some variation of this hypothetical process may be characteristic of a theory of ethnogenesis, but can it really be a verifiable, existential phenomenon. The potential anomalies within this
model seem to grow in proportion to greater depth at which Gumilev attempts its formulation. The model, however, cannot stand or fall without either a full articulation or a test of its final form against a body of empirical data, although in this series Gumilev never provides a full exposition of its value in a specific praxis, despite weaving in at each level empirical examples that support specific points.

**The Four Phases of Ethnogenesis**

In demonstrating the theoretical structure of a four-stage ethnogenic model, Gumilev admits that "the actual birth of an ethnos cannot be established by this method because the only source material would be its behavior." Evidence of an ethnogenic birth could only be reconstructed as a hypothetical event from records of its historical, archeological, and geographic impact on the landscape. Gumilev proposes the first two stages of this process are:

1. an initial stage of ethnic quietitude where relatively homeostatic equilibrium prevails, each generation following its predecessor's way of life; and

2. an inertial burst in which the "birth" occurs. The transition from quietude to inertial stages, however, tends to be invisible. This is due to a lack of historical and archeological evidence, partially resulting from both heterogenous origins and varying length of time needed for each particular ethno-core to evolve traditions that are manifested in material culture or in geographical expansion. Moreover, given the likelihood that an ethnos might perish "before it gains enough strength to resist the environment," this would represent "an accident of history," and as such would not affect the regularity of the model. Therefore, Gumilev concludes that evidence to support ethnogenesis must be found within historical materials describing its manifestations during subsequent developmental stages.
Given a natural development uninterrupted by historical accidents, the new ethnos evolves over time and begins to make marks on its environment. These marks are then noted by external observers, by its own historians and in actual changes in the landscape, discoverable through archeology and paleogeography. It is, then, the recorded behavior of an ethnos that provides the source material from which is drawn the evidence necessary to interpret its genesis and trajectory. But, despite the fact that the "inertial" stage of an ethnogenesis is found by Gumilev to be associated with its greatest activity, it does not always leaving "traces in material culture, especially when that activity takes the form of conquests." Therefore, Gumilev (1973a:326-28) poses a unique role for the ethnologist, whose field deals with the behavioral stereotypes among groups yielded together by a common destiny, i.e., the cause and effect relationships of historical events. . . . Archeologist are . . . able to date only the phase of ethnic foundation, when the ethnos has already taken shape and assumed characteristic features. But the ethnologist wants to establish precisely the origins of that innate burst of energy that is so essential for the process of ethnogenesis to begin.

Even though Gumilev previously discussed the four stages (1970:43-46), he now describes them in relation to the just proposed operational model of ethnology. The four stages: (1) quietude, (2) inertial burst, (3) decline, and (4) return to quietude -- can be all so easily compared with Ibn Khaldun's model of tribal-religious movement, (Mahdi, 1949; Al-Azmeh, 1981; Rosenthal, 1965), that the latter could also be called a theory of ethnogenesis. Not to become sidetracked, however, into too many obvious comparisons with other life-cycle models of culture, society, or ecosystems, Gumilev's acorn-to-oak model must be assessed independently in order to critically apply any empirical test. Nevertheless, having dealt with the first stage of "quietude," we now confront the problem of its "invisible" transition to the "inertial" second phase. This true inertial, or ascendent stage, requires a large number of individuals with
a new behavioral stereotype in order to "exert a noticable impact on the course of historic events." Therefore, it needs an incubation period with "time and opportunity for intensive reproduction." In this incubation period, Gumilev states that a superburst of energy is invariably associated with ethnoogenesis and necessary to trigger dynamic behavior among the new adapters. In general, this surplus energy also wreaks havoc on the landscape and peoples within the immediate vicinity of this surging innate drive, and follows the easiest path of expression, i.e., "an expansion of the habitat...[and] in ancient times incursions into neighboring countries." In a strange analogy, however, Gumilev comments that contemporary excess of innate drive takes the form of "exploration into space." As only a handful of selected, trained and highly "controlled" astronauts and cosmonauts have been sent into space by the only two countries with the facility for this tenuous technological experiment, this seems a moot comparison, possibly political in origin.

Turning to the conditions under which the processes of transition to the second phase occurs, Gumilev discusses its "creative" attributes. That is, internal to this stage, ethnoogenesis undergoes a phased expansion and transformation of its bioenergetic qualities (innate drive). Once a certain amount of energy builds up within an ethnos and then exceeds "what is needed to maintain the system," it must find an expansive outlet in order to release the internal pressure. Therefore, when the peak of energetic buildup is passed, the level of tension declines to an optimum, allowing for creative activity to unfold. This is the mechanism that produces the culture of a particular ethnos, and often of a group of ethnoses, or super-ethnic entity (1973a:328).

On the surface, this phase of the model seems to correspond in empirical terms to, for example, what is known about the early period Arab-Muslim ethnoogenesis and its expansion, although Gumilev only mentioned it in passing as an
empirical example. But, what is unique about the Muslim ethnogenic process as an example, is that we know so much about its earliest natal period, being able to date its ideological, political and spiritual nascence and stages of expansion. We also know that after an initial burst of energy, the Muslim ethnogenic process demanded and produced a strong cohesiveness, corresponding to Gumilev's observation that whatever the level of individual energy, at the group level, this process is typical not only of those who are endowed with drive, but of the entire ethnic group, including its most passive individuals. Their thoughts, feelings, moods, etc., are always in tune with each other, especially with their more active compatriots. Any division of an ethnos into passive and active members is arbitrary, both because attitudes vary smoothly between the two extreme poles of activity and passivity and because the active elements of the group would never be able to achieve their aims without their passive helpers. The ethnos acts as one during this period (1973a:328).

One could find ready analogies here between this proposed level of cohesive energy and Czikszentmihalvi's (1979) description of "flow," or for that matter with Turner's (1969) notion of "communitas."

The third stage proposed by Gumilev for ethnogenesis, represents a period of decline, proceeding from both external developments and the group's own dialectical development. Tension is reduced in the latter process through two phases: (1) a constant elimination of active members; and (2) simplification of the ethnic structure, stimulating non-creative activity. This second element could be important in interpreting, for example the overall model of the Muslim superethnos in its resemblance to an earlier pattern noted by Lombard (1971), and to which I will refer in its present phase, as "shadow ethnogenesis." This implies a parallel between the early highly creative direction of energy, once its force has been brought under a cybernetic form of control by the ethnic system, and a later, less-creative, less-energetic simulacrum of that inertial energy. Such a later stage may have surface resemblance and
similar characteristics to the initial stage, represents what Gumilev (1973a: 328) refers to here as

renewed activity [that apparently mimics] the original innate drive, or the capacity for superexertion, but [displays] an increase in impulsiveness, an absence of moral inhibitions, which would thus represent the loss of a characteristic, rather than a characteristic.

Differences between behavior Gumilev characterizes as "an absence of moral inhibitions" and an early cohesive purposefulness of an ethnic process may seem contradictory when used as an empirical example of a so-called Islamic ressurgence. The case I make, however, is that these revivalist, fundamentalist backward-looking movements, are aimed at their own Muslim authorities within a nominally Islamic social system, not at a pre-Islamic stage of ignorance and external oppression. Moreover, such movements are generally nationalistic, tribal, or sectarian, and rather than building a new system, i.e., Islam, and broadly assimilative to a new ethnos, inclusive and cohesive, they represent a non-creative expansion of energy, and only emulate the original creative movement at a surface level of signification and affect. Therefore, it can be restated that, such revivalist movements are never more than a shadow of the original passionate energy of an ethnogenesis. Furthermore, the relationship between ethnogenesis and religious movements, involves the latter as a manifestation of the purposefulness inherent in the process of innate drive. I would further maintain that religion represents no more than a term labeling ensembles of speech acts, rituals and other displays of relevant ethnic behavior, and as such manifests the signifiers which wrap a deeper set of biosocial phenomena that bind a heterogenous assembly of people to an ethnogenic pulse, thus presenting an "intentional" surface to identity.

Here, I would point out that dogmatic adherence to contemporary interpretations of an evolving set of traditions is not the equivalent to
values and actions of radical traditions created by the energized originators. In the case of the Islamic ethnogetic movement, some fourteen centuries earlier, little differentiates the Arab, ethnogetic impulses from the absorptive supertribe of the Muslim 'Ummah, or commonwealth. Historical research has demonstrated that in many cases, Hadith, or traditions, were not only recorded much later, but some were actually fabricated at later dates. Irrespective of this latter fact, a Muslim superethnos, with its corpus of institutions and necessary internal limits to complementary and recognition, has most certainly continued to expand, and has been offered a renaissance in both nationalism and an economic surge based on exploitation of valuable resources. But are these primarily facts of a social nature, and if so what do they have in common with new adaptations of, and to, landscape and expansion of tribal migrations, that together represent a manifestation of ethnogenesis?

To answer that question, one could take an example of the Soviet expeditionary forces in Afghanistan. They obviously do not represent either a new Russian or a Muslim ethnogenesis. Then too, neither do the Pushtu migrations and resistance, or the continued struggles of Kurds, Baluchi, Druze or Dhofari for autonomy, represent ethnogenic impulses, as they do not combine into new ethnic formations. It might be argued, however, that nationalism, as an attempt to bring unity and coherence to disparate tribal and ethnic groups within a newly created region could represent a bump of ethnogenic energy, but not of a primary level. Most notable, would be the Saudi Arabian example of a tribal explosion and adherence around the figure of Abdul Aziz al-Saud, followed by a growing coherence of a nation around new institutions and adaptations to an oil boom ecology and multi-tribal state. Here we can see the dialectic interplay between social and natural forms of activity. But, in conclusion, what appears to be happening within the Muslim world as an example
of a superethnos, is a restructuring of levels and segments involving a further, and continuing, adaptive process. This is especially evident in light of the jolts engendered by: national formations, liberation from colonial rule, new means of communication, growth of institutional and infrastructural networks, and development of resources producing new forms and amounts of capital accumulation and distribution. In conclusion, we can see the social factors interacting with existing underlying ethnic structures, and displaying the impact of the biogeographical base (landscape) encompassing the arena in which all these social events occur.

Earlier in this study of Gumilev's theories, a second set of elements -- exogamy and interbreeding -- was introduced along with natural selection as internal factors contributing to ethnic decline. Gumilev refers to Bromley's (1978) studies on endogamy as a primary maintenance feature of an ethnos. They both attempt to demonstrate that its effects stabilize traditions through: (1) hegemonous reproduction and transmission of cultural information by the endogamous family; (2) creation of ethnic isolates through maintainance of "a genetic barrier separating an ethnos from its neighbors"; and (3) retardation of the entropic loss of innate drive when "harmonious individuals once more gain the upper hand over pseudo activists." According to Gumilev,

endogamy might be [hypothetically] viewed as the normal way of life of an ethnos, it is optimal only during periods of relative inactivity and the actual process of ethnogenesis happens to be associated with paroxysms of exogamy . . . [yet], most of the modern ethnic nations are virtually endogamous since [citing Bromley (1978:55)] "more than 90% of their members tend to conclude ethnically homogenous marriages" (1973a:328).

Here, Gumilev gives two examples of the effects of exogamy during ethnogenesis, first among the Arabs during the early Muslim Hijra (7-9th centuries), and second, in the Ottoman period (14-19th centuries). Discussing the expansive phase of Arab ethnogenesis, Gumilev found its exogamy resulted from having
established harems, or if that was too expensive . . . an easy divorce from wives of whom they had become tired. Most of the wives and mistresses were either purchased in slave markets or brought home from conquered lands as war booty (1973a:329).

This proposition does not seem to have any corroborating base in the literature on early Islam, nor has Gumilev provided any references to sources. In fact, what we do see is arranged tribal marriages so as to maintain the ethnic solidarity, collective wealth, status and reproductive capital of the group. Secondary wives among the Muslim warriors and urban merchants who spread out into the newly conquered territories were most certainly chosen from captured women, "what the right hand posessed," but inheritance rights were not always extended to offspring of those liaisons, and the stipulations against temporary marriages closed off those avenues of alliance. This is not to deny an increasingly heterogenous population base, especially among the offspring of Mawali (converts) and Arab Muslims, but as Lewis (1976:), explains the difference between the cosmopolitan, elite Muslim tribesmen (Khassa) and the common folk ('amma),

The Islamic Khassa is a group which extends with a common membership and self-awareness over the whole area. . . . In the Islamic world . . . the khassa had its own limited number of common inaquages and possessed a common culture expressed in them . . . the Muslim freemen -- hurr . . . [who] were the full members of the society. In the earliest days they were almost all Arabs, constituting an aristocracy formed and defined by conquest. They monopolized all high offices, provided the armies of the state and paid few taxes (1976:33).

That these elite Arabs declined while commoners grew rapidly "by natural increase, and above all, by conversion," fits into Gumilev's general model, and the devolution continued down even from Muslim freedmen to slaves, as Lewis (1976:33) continues, the many functions previously reserved to Muslim freemen (hurr) were delegated to freedmen (mawali) and then even to slaves, notably that of military service, so that in time the armies and hence governments of Islam came to be dominated by slaves and former slaves. The presence of freemen suffered accordingly, through their legal status remained unchanged.
Again, this observation is still in line with the basic ethnogenic model, but whether these freedmen were offspring of Arab liaisons with "foreign" women is another point. The status of the freedmen or clients (mawali) represented, according to Lewis,

the confluence of two different traditions: ... that of the freedman in Roman law, who becomes a dependant or client of his former master; ... [and] that of the adopted member of an Arabian tribe. So closely was Islam identified with Arabism in the early days of the caliphate that for a non-Muslim to become a Muslim it was considered necessary for him to become a mawali -- a kind of naturalized or adoptive Arab (1976:33).

One can, in fact, argue that the bulk of the Muslim population rapidly grew to be mawali during the Abbassid period. But here we encounter the importance of endogamy growing out of earlier Arab tradition in the classification of tribal status among mawali. Turning to Lewis (1976:33) again, we find that

In old Arabia, mawali were of two kinds -- those who were such by birth, as the sons of slave mothers and free fathers, and those who became clients by protection of the tribe. The mawali could not intermarry freely with full members of the tribe and their membership was subject to various other restrictions. Before the great Arab conquests virtually all the mawali were Arabs. There were still Arab mawali during the Umayyad period ... but decreasing and instead the term came to apply most commonly to the manumitted non-Arab slaves ... a relationship [which] approximated in many respects to the blood-tie. The mawla became a member of the tribe to which his former master belonged and this membership continued from generation to generation ... [sometimes] allowed to inherit from his patron ... [and] subject to certain social economic and fiscal disabilities [e.g.,] the use of personal names and intermarriage. Eventually [they] did achieve complete equality, mainly because of ... the rise of slave power [erasing] the differences between freedmen and freedmen ... and the establishment of alien domains under which the distinction between Arabs and Arabized non-Arabs ceased to signify.

We see that while relationships between the Arab-Muslim population and a growing 'Arabized' Muslim population of slaves and freedmen and women probably produced offspring in excess of replacements for the males lost in conquests, the status of those offspring and their ethnic rights differed from that of offspring from legitimate endogamous marriages over a considerable period.
Furthermore, the casual mention by Gumilev of easy divorce does not accord with the data of tribal rules, nor does it have any significant bearing on the premise that an inertial ethnogenic phase involves a high level of exogamy. Many other problems arise in Gumilev's treatment of issues related to the Muslim world and Arab ethnogenesis, some of which will be taken up later.

Turning to the other example, that of the Ottoman empire, Gumilev claims the same situation regarding exogamy existed here as in the earlier Arab ethnogenesis. First of all, the Ottomans inherited a dual military tradition: as frontier skirmishers against non-Muslims, and as military slaves and mercenaries in the palace guard; both used within an existing superethnic system of Islam with its fully interactive ethnic and institutional linkages. Secondly, the Turks, although long forming a military caste within the Arabo-Persian dominated cultural system of the Muslim world, only were significantly converted in their homelands during the 10th century. Following the earlier Seljuks and Danismends -- as Muslim defenders of the Islamic frontier, marauders into the Byzantine marches, and as active opponents of Shi'ite subversion -- the Ottomans also began, like the Danismends,

[as] the freer spirit of the frontier . . . a culture amalgamated out of charismatic leadership, tribalism and heterodox religious influences heavily influenced by mysticism, [but also evolving, towards stability like] the Seljuks . . . who stood for state control, organization around sound Islamic principles of government and taxation, and religious orthodoxy (Itzkowitz, in Lewis, 1976:274).

The Ottomans also introduced two new organizational systems -- a Persian "timar" administration of lands and taxes, and a slave, or "ghulam" conscription. The first system involved state control of the economy in which "shares in the income produced through taxation were distributed to loyal warriors of the sultan in return for military service." Secondly, slaves taken in battle or conscripted were used to staff a standing army and bureaucracy, given
a structure of military and civil service through which they could rise in rank, position and privilege, (Itzkowitz, 1976:274-277). These slaves, however, were not allowed families, or if establishing them, the offspring were not allowed to inherit either the status, or even opportunity to join the civil service until near the end of the empire. Neither were the Ottoman tribal warriors of the timar system allowed to pass on their actual land fiefs to their offspring, although the right of membership in this caste was inherited.

Again, within the elite, "harems" (actually a misnomer), were often large and staffed with concubines from heterogeneous ethnic backgrounds. The offspring of concubines, however, had considerably less social status and inheritance rights than legitimate offspring of wives. Nevertheless, the population expansion required during an ethnogenic incubation period profited from this heterogenous source of offspring, but which was of a much more complex structure than refered to by Gumilev and with more difference than similarity in relation to the Arab ethnogenesis. Finally, it should be concluded that in both cases, the endogamous marriage and offspring were continuously maintained as an ethnic core having elite status that was, in the Arab case, jealously guarded up to the present. The Ottoman society was, generally, more heterogenous in its elite, especially among the sultans, many of whose mothers were slaves, but for reasons other than Gumilev states here, and which will be discussed later when dealing with Gumilev's further use of the Ottomans as an example of ethnogenic processes.

To these problems in Gumilev's interpretation of exogamy in the Arab and Ottoman ethnogenesis must be added an equally problematic statement that this sexual promiscuity extended not only to the victorious men, but also to the women of the conquering ethnos, for during the long absences of their fighting husbands,
the ladies would surround themselves with favorites from among prisoners of war or renegades (1973a:329).

Certainly the fear of cuckoldry was deep in the minds of men going off to battle, as the basic paradigm of the "Thousand and One Nights" cycle of tales exemplifies. The royal personage going off, forgetting something, returns unexpectedly to find his wife in the embrace of a Black African slave; killing them both, he goes on to visit his brother, to whom the same kind of event has occurred, and thereby resolves never to trust a woman after one night. The wily Sheherazad undertakes to tell a series of stories so interesting that she is pardoned each morning of her daily scheduled execution, until the king finally trusts her, and rescinds his order, marrying her, and they presumably live happily ever after.

To thwart these opportunities for female philandering, tribal societies and their urban extensions set up close systems of collective female living, and in the case of elites, castrated male overseers, in order to maintain control over women as their reproductive property. A second factor of reinforcement for endogamy and limitations on the female sexual opportunity was the collective honor. As Germaine Tillion (1983) so convincingly argues, this preneolithic Mediterranean custom, or predilection, continues to a greater or lesser extent into the present, throughout all of those societies, not only the Arab. Either the offending female who has failed to prove her virginity, and hence value at wedlock, or the woman publicly accused of sexual indiscretion is readily dispatched by close male relatives who would lose honor otherwise.

As with most such primitive mores for protecting both the group's honor and its reproductive capital, the older women actively participate in guarding the potentially more sexually active younger females. In extreme cases, the murder of an unmarried female family member, found to be pregnant
for example, would be carried out secretly by her own kinswomen, as they alone would have intimate enough contact to notice it. In the case of marital infidelity, vengeance is first the husband's, then belongs to the woman's family. Most extreme physical mutilation accompanies the symbolic protection of honor in East Africa among many ethnoses from Nubia south to the Bantu frontier. There, not only is female circumcision practiced, but also the vagina is partly sewn up at a puberty ceremony all accomplished by the senior kinswomen of a girl's own family. These practices are neither prescribed by Islam, nor legally permitted, but remain deeply embedded in the collective subconscious, folklore, and traditions of the ethnoses who maintain these practices anyway.

Returning to Gumilev, his contention of female sexual promiscuity may have some foundation, although feared more in the breech than in the fact of practice. That such "indiscretions" existed, is undeniable, but that they pertained to either Arab or Ottoman society at any time and in any serious magnitude so as to affect either the "behavioral stereotype," or the population increase remains highly doubtful. But even if we stick to the well documented male exogamic practices, was their end result, as Gumilev contends, "the destruction of ethnic traditions, as the mother would teach the child one set of values [including language], and the father another set." Here Gumilev admits the possibility of "ethnic mixing yielding in some cases a viable progeny," but outlines the following possible negative outcomes as more likely:

(1) the new generation only being able to maintain its living by using up the wealth accumulated by its ancestors; (2) ultimately the interethnic barriers would become eroded, ethnoses lost their distinctive character and sometimes assimilated with one another; but (3) more importantly, political states and other institutions created by exogamous ethnoses tended to be short lived (1973a:329).

Again, Gumilev's examples do not always find support in the actual historical records, conversely, these examples are not needed to support
propositions that are less than crucial to the overall model, as later it
should be demonstrated that much of the model can be supported by differing
interpretations of historical generalizations drawn from the Muslim experience.
Gumilev claims that endogamy supported the Roman ethnogenesis, allowing it to
survive for over 900 years, while "the Arab Moslem ethnos, by practicing exoga-
my, was weakened within 300 years and lost its political state completely by
1256, i.e., within 500 years." He not only fails to support this contention,
but assumes that in the Roman case "even interethnic marriages were generally
concluded within the superethnos, thus constituting a form of endogamy."

If we were to produce one statement that would best characterize the
Muslim case of endogamy, exogamy in practice, it would be best represented by
Gumilev's preceding statement. For even the reader least familiar with Islam
and Muslim practice, the anathema of marriage outside of Islam is a given.
Differences between the strictly forbidden female exogamy and the more tole-
rated male exogamy are clear; the general assumption of conversion on the part
of potential, or in the male exogamous case, actual spouses, in effect brought
the spouse within the fold of an Islamic superethnos in an overwhelming majori-
ty of the time. Furthermore, in taking up the point of child rearing and
cultural transmission, the Muslim male would usually bring a non-Muslim, or
even differing ethnic, wife within his family fold where the acculturation and
assimilation of the new wife and offspring would rapidly occur. Seldom have
any cases been reported of Muslim males joining the families of their non-
Muslim spouses and either converting to another religion, and hence ethnocul-
ture, or of generally allowing their non-Muslim wives to bring up their off-
spring within their maternal, non-Muslim, family environments. I cannot see
what he has gained by attributing the historical lifetime of an ethnos to
exogamy, particularly such easily refutable examples as Arabs or Ottoman Turks.
Though beyond our empirical topic, Gumilev's other example fares no better than the first. He claims that the Mongol empire declined as a result of panmixia, or interbreeding, after their empire drew slaves, artisans, scholars, merchants, and a host of foreigners into their midst and landscape core, doubling their population. Other scholars such as Grousset and Lattimore, who have studied the history of the steppe nomads and the Mongol empire pose more convincing reasons why such unstable tribal formations never created a lasting empire: essentially, that the ecological and ethnic structure of highly segmented mobile groups could never form more than temporary confederations. But certainly it is hard to accept Gumilev's notion which attributed the demise of Khalkas' at that time, to the primary factor of

interbreeding [which] even resulted in modifying the anthropological type of the Khalka Mongols, giving rise to many long-headed types with high noses... [But also] even greater changes occured in their mentality, with the appearance of apathy, [and] a tendency toward contemplative life; in short there occured a marked abatement of innate drive, lasting until the 19th century (1973a:330).

It does seem reasonable, however, that their "innate drive" abated until the 20th century, when they entered into a revival that Gumilev associates with "a new cycle ethnogenesi, associated with the inclusion of Mongolia within the Soviet superethnos." Is it then possible that an ethnic group can have a true ressurgence, or only a "non-creative ... increase in impulsiveness," as implied earlier in his discussion of second, or "renewed activity" during the phase of decline. Moreover, if association with a superethnos is a primary cause for regeneration of an ethnos, then does not this change the previously stated deterministic momentum and trajectory during an ethnos' phase of decline. In the final analysis, such anomolies must stand rigorous examination. Modifying his earlier conclusions, or perhaps applying a dialectic method, Gumilev states that he is
not trying to imply that a heterogenous population emerging from the round of historical uphevals is necessarily always endowed with less drive, [as] in some cases, it is precisely such an ethnically mixed population that gives rise to a new ethnos with a distinctive stereotype of behavior (1973a:330).

In fact, according to Gumilev,

a new ethnos may arise from the mixing of several ethnic substrates, but not always. In other words, the burst of ethnic energy that sets off the process of ethnogenesis requires yet an additional factor, without which the process cannot begin (1973a:330).

Here we find that a new ethnos can arise from the mixing of ethnic substrates, but also from a single set of existing dormant ethnotypes, therefore the heterogeneity does not seem to be necessary. But if that is possible, then it would also seem logical that interbreeding can either be a strengthening or a weakening factor, not necessary only the latter, differing with each particular ethnogenesis and its natural and social circumstances. The strength of his argument over the degenerative influences of exogamy and inter-ethnic mixing seems to be negated by his own conclusions. Can we then not relegate the link between innate drive and endogamy to a secondary place despite Gumilev's (1973a:330)-contention that

by demonstrating the linkage between the innate drive of an ethnos and endogamy, we have shown that this ethnic energy is not a social phenomenon but is inherent in an ethnos as a biological population?

A subsequent claim, that ethnic drive is an inherited biological characteristic, is founded upon this preceeding contention. Moreover, since the innate drive of an individual has its basis in the energy of the living matter of the biosphere, that drive and the resulting ethnos must be viewed as a natural form of motion of matter, taking place in a gap between the social and biological spheres (1973a:330).

Gumilev concludes that innate drive exists and has been proven as a fact by his arguments and presentation of supporting historical evidence, but that "an explanation of the drive must be left to geneticists and anthropologists." The present thesis can possibly provide sufficient evidence from these two fields
to support a claim for the existence of innate drive, but will need a rigorous argument based on more reliable historical data to offset the few weak examples presented so far by Gumilev, despite the intuitive soundness of his notion of ethnos. His weakness represents an opposite to the problem found in van den Berghe's (1982) sociobiological study of ethnos, which presented very effective ethnographic evidence to support an untenable reduction of all interacting process and structure to a genetically based kin selective altruism.

Despite their contrasting weaknesses, the two works on ethnos, by Gumilev and van den Berghe, offer departures from the problematic constructions of ethnicity by mainstream sociology. Each, however, faces the problem of reducing a complex set of biosocial phenomena to a single cause, genes for van den Berghe and "energy" for Gumilev. In attempting to turn their weaknesses into strengths, I suggest that, contrary to Gumilev, genetic mutations and "hard wiring for kin selection" do play a role in ethnogenesis. Similarly, I find that Gumilev's proposed energetic trigger could both affect a new ethno-rhythm and engender a genetic as well as behavioral mutation. What is more important, the biospheric energy postulated by Gumilev would have had to affect more than just one species, Homo sapiens. If the relationships between species within a community constitute a food chain and biocenotic process, and especially if those domesticated species are incorporated as part of an ethnos, then it would stand to reason that mutations in the behavioral capacity and "way of life" of a segment of the human population (the ethnos) would involve changes in the patterns of community activity. Therefore, whether sociobiological or not, behavioral mutations giving rise to a distinct ethnos must necessarily appear as changes in other species and energetic patterns within that biosocial community. In this case, ethnos would inherently be a geographical phenomenon.
This concludes both this chapter and the section on geography. As it must be rather plain by now, these divisions are rather arbitrary, as the following section is simply an advancement of the basic argument, augmented by a greater focus on the phenomenon of ethnos and a greater refinement of the theoretical construct. In conclusion to this geographical focus, I would sum up Gumilev's argument as follows: the ethnological lens provides the best focal length for observing that man-nature relationship which is at the core of geography, especially when the object is to reconstruct a complex cultural landscape.
CHAPTER XIII

ON ETHNOS -- STATE OR PROCESS?

At this point, nearly seven years after the appearance of Gumilev's first article in the Landscape and Ethnos series, various reactions and criticisms have begun to accumulate in Soviet academic circles. Generally, his attempt to resolve the contradiction between social and natural causes for ethnos (or for that matter, his question of just which field ethnography should reside in) has landed him criticism from both sociological and geographical sides. Gumilev responds here to a reproof from the social side, in the archaeologist Artamonov's (1973) claim that,

ethnos [although] a social category ... is not a social organization, but an amorphous state [in which] the dependence of man on nature decreases with an increase in his cultural level (1973b:394).

Such a proposition is unacceptable to Gumilev, who responds with examples of how the human organism not only "takes part in the conversion of life communities," but is also capable of action and thought ... can adapt to a changing environment ... can alter ... [and adapt] it to man's needs, that combines into groups and ultimately forms a political state. The thinking individual represents a single whole together with the organism and therefore is part of living nature, which constitutes one of the shells of planet earth (1973b:394).

Beyond an elementary organic lifestyle, there evolves its evolutionary byproduct, human consciousness, which is social rather than individual. That is, in
Marxist philosophy the thinking subject is socially constructed from interaction, as "it is not the consciousness of men that determines their being, but on the contrary, their social being determines their consciousness (Marx, Preface to A Critique of Political Economy, quoted in Rader, 1979:16).

Following in the classic organicist line of Marx, Gumilev (1973b) states that tool-making raises man to produce

yet another qualitatively distinct earth shell . . . the technosphere . . . [in which its] products, social institutions and ideological systems are no longer subject to natural change. They can be either preserved or destroyed. In the latter case they revert back to nature . . . [thus] we have the death of things of the technosphere and the recovery by nature of material seized from her (1973b:394).

On the basis of the foregoing assumption, Gumilev's suggested this solution:

Global evolution is a social form of motion of matter manifesting itself in technical progress, which determines the succession of modes of production; in the population explosion and in the extension of man's habitat all the way to the moon, even though man's adaptation is ruled out there, and, most importantly, in the succession of socio-economic systems (1973b:394).

As the technosphere exists within both an organic human subject and its respective landscape, both elements of the biosphere, Gumilev (1973b:394) finds that

the striving towards adaptation reflects the biochemical form of motion of matter as well as the implication of Homo sapiens in the biosphere . . . [thus] not only an ethnic group or a social organism, but each individual person represents a laboratory in which all forms of motion of matter are in operation -- mechanical, chemical, biological, and social -- each one performing its particular role.

Individuals inhabit ethnospheres wherein social factors of their particular technospheres converge with natural factors as a specific organic group in adaptive interaction with their respective landscapes. In turn, this ensemble forms a segment of the anthroposphere, an active element within the biosphere, and hence subject to its regulation by other geochemical and physical laws.

Continuing his rebuttal of Artamonov, Gumilev cites Kalesnik's (1955) proposed correlation of all these forms which have demonstrated the falseness
of Artamonov's statement that man's dependence on nature declines with increased culture. Beyond these philosophical statements which support a rational argument for an integral biosocial human life sphere (anthroposphere) and its ecology, he gives no empirical facts from Kalesnik or elsewhere to support the argument. But such evidence from Gumilev would, at this point, be redundant in light of current general (non-Marxist) scientific knowledge. Idealism can now be soundly refuted with results from a wide range of research that strongly supports a biosocial basis of human behavior; in genetics, the nervous system, neuro-anatomy and physiology, ethnology of communications and biorhythms.

On the Concept of State Versus Process

Another element within Artamonov's claim which Gumilev rejoins is the use of the term "state," to describe ethnos as amorphous, or having no body, form or shape. He cites findings from science that provide a definition for "state" as a natural phenomenon, (solid, liquid, gaseous, and plasma) in which the transition of the molecules of inert matter from one state to another is associated with a somewhat greater loss of energy in the form of the latent heat of fusion or vaporization, i.e. a small leap which moreover, represents a reversive process. In the living matter of the biosphere such a transition involves the death of the organism and is irreversible (1973b:394).

From this definition we can conclude that there are only two possible states for an organism, life and death; the latter represents a disintegration of the whole, thus not a state; and the former, the life of the organism, represents a process from birth through a mature reproductive phase to death. Therefore, an ethnos constitutes an interconnected set of organisms, and as a part of the organic lifecycle, it is a process and hence cannot possibly be a state.
Taxonomic Differences Between States and Processes

The importance of this argument over categories becomes clear given the implication that the human organism in its condition of ethnos is a process rather than state. This conclusion also affects the range of possible classification techniques used for subdividing and defining the elements of ethnos and their relationships. Gumilev also suggests that taxonomy is a necessary requirement of the natural science method, and thus of the discussion of ethnos as a natural phenomenon. Furthermore, in exploring the process of the natural historian's work, the biogeographer Dansereau (1973) gives primacy to taxonomy, as he states:

"first comes the naming habit. Taxonomy is of the essence . . . but naming is describing. It does not suffice [merely] to define the attributes that distinguish one object from others that look like it and those that do not (1973:15).

Here, Gumilev can claim support in privileging taxonomic procedures, but must accept two challenges: first analysing the observed differences as interactive processes, and second, demonstrate the cause and effect relationships he claims. But, regarding the differences in appropriate procedures of classification, Gumilev finds that "states" require categories "based on a particular principle suitable for encompassing the phenomenon as a whole," whereas, classifications for evolutionary or developmental processes require "a systematic approach based on the hierarchical principle." Therefore, in this systematic, hierarchical ordering of processes,

similar, though not identical, groups of different ranks are subordinated to one another, [an] approach taken by Linnaeus and perfected by Darwin [as] the hierarchical character of the organic world derives from the march and character of evolutionary processes that are both inseparable from and essential for life (1973b:395).

Only "dead" organisms, or life forms, can be transformed into a state, and
hence no longer being alive, represent only a skeletal form of inert matter.
Within the technosphere, i.e., the sum of human artifacts socially transformed from nature, "states" do exist. For example, a small amount of energy controlled by human agency can turn ore-into-metal-into-tools, mud-into-brick-into-house, clay-into-pot, etc.; and in reverse, each of these technical products can be easily transformed back into inert scrap. In social life, however, the term "state" represents a civic association, an institutionalized political organization, "estates," or "figuratively a social class." But as states return to the technosphere due to productive relations and forces, and thus tend to be both highly unstable and unaffected by any stable hierarchical principle. Hence, Gumilev concludes,

"it would thus appear that the successions of social states are similar, but not identical, to successions of natural states: they are reversible and require a certain amount of energy for the transition from one state to the next (1973b:395).

Here we encounter a problem in dialectical philosophy. Hegel proposed that the political organism of a "true" state would unite its members in an integrated, harmonic and interactive "state of being," whereas existing, non-organic, political entities do not achieve this higher synthesis.

The state is an inclusive structure that encloses a hierarchy of structures. In between the family and state is the "civil society" which includes school and church and cultural association and economic group... The organism of the state is articulated in subordinate "estates" -- the landed aristocracy, the business community, the government bureaucracy. To achieve the cohesion necessary to constitute a state the citizens should not enter the political sphere as "atomistic" individuals, but through their associations, corporations, and estates... the state "in toto" must be strong enough to curb the antagonisms of civil society and synthesize its multifarious interests (Rader, 1979:66-67).

Hegel conceived freedom as the unity of the subjective and objective worlds, envisioning the historical process to climax as a "synthesis of divergent interests in the state and the achievement thereby of a civic humanity." Marx,
on the other hand, saw a contradiction between Hegel's notion (idea) of the organic state, and its constitution as a real political entity, as well as its ultimate objective possibility or desirability. He also denies Hegel's single abstract category of "idea" in that, as Rader quotes, "there is no bridge by which one can pass from the universal idea of the organism to the particular idea of that organism of the state or the constitution of the state." Marx shares Hegel's metaphor of an organic state, considering it as a great advance... and hence no longer to consider the diversity of powers as inorganic, but rather as living and rational differences... [yet in contrast to Hegel] and all those who extrol the state as an organic unity... Marx is concerned with organic disunity -- the schisms and contradictions that fatally impair the unity of the whole (Rader, 1979:68-69).

We can see the historical, philosophical basis of Gumilev's separation between organic wholes as natural processes, and states as inclusive of metaphorical social organisms, but not subject to the same regulations of natural laws. Are the non-hierarchical, reversible and transformable aspects of states applicable to the process of ethnos: "can one, with a bit of effort, change one's ethnos?" Gumilev asks rhetorically. This question attacks the heart of our problem, the social science insistence on ethnos as a conscious, intentional affiliation. Gumilev's reply proposes, instead, that ethnogenesis proceeds with time and is irreversible. The transition from one phase to the next... requires no additional input of energy since the inertia of the initial push is adequate. This alone indicates that ethnos is not a state -- all the more not a civic state -- but a process (1973b:395).

Gumilev blames the notion of ethnos as state upon the "absence of historical perspective in the observer." He criticizes the detached researcher as limited by both the time span of his observation, "several years," and the equally limited scope of a topic, its region and epoch. The researcher is thus not able to synthesize or integrate that small "cluster of states that are
unrelated to one another and simply happen to coincide in space and time."

Here, Gumilev claims a regularity and life span for an ethnos, its ethnogenic process, that is difficult to accept at this stage of the theory's development. Moreover, despite the limited empirical justification of the ethnogenic model, and despite his gratuitous complaint directed at other researchers, that "any proof in science can be effective only if one's opponent possesses a certain amount of erudition," he claims that "without outside interference, the process of ethnogenesis tends to run its course over a period of 1200 to 1500 years."

Contradictions between this claim and empirical evidence for briefer ethnogeneses cannot be proved, as the theory proposes both external and internal causes for a shortened term of existence. As to longer spans— for an ethnos, they can be attributable to social causes or incorporation within a superethnos. It is, therefore, difficult to meaningfully criticize this proposed life span.

One final point: the concept of ethnos as a state involves "the poorly defined nature of ethnic boundaries in zones of ethnic contacts." In Gumilev's opinion, the mixing of ethnic groups is always spontaneous and "highly variable, in the sense that the results of such interbreeding often turned out to be unexpected and almost always out of control." Conversely, he finds that transitions of individuals from one social state, or rank, to another, "can be altered simply by a notation in one's personal file." But he does not identify the source of his argument against process, nor does he clarify how indeterminate boundaries between adjacent ethnoses are linked to the notion of state, rather than process. He still does not answer the question of whether a person can change their ethnos as easily as they can change social status. But, if he is talking about the spill-over effect between adjacent ethnoses that leads to mixing, then the correlation between social status and ethnic affiliation presents a distinct possibility, and hence a problem for the model.
In responding to the implied correlation between changes of either social status or ethnic identity, Gumilev avoids the issues of intentional or circumstantial situation, and that of somewhat ambivalent marginal individuals who may "jump" boundaries on a situational basis. Instead, he assumes a philosophical point of qualitative difference. On one hand, a change of social standing may occur on multiple occasions within a person's life as a result of historical and social fate, irrespective of the individual's intention. In fact such changes are a necessary condition of the social form of motion of matter. Ethnos, on the other hand, is a natural condition that, while generally stable, may involve a necessary readoption in a lifetime due to either the removal from the person's own ethnos, or its extinction. An ethnic change, however, would involve not only social forms of consciousness and intentionality, but it would also involve deeper, psychic patterns of subconscious, biochemical and physical behavior, and thus is both qualitatively and quantitatively different from a transformation of social status.

Establishing The Basic Taxonomy

Gumilev's response finds an escape from further clarification of this issue by taking an ambivalent position on whether or not mixing (exogamy, or interbreeding) is beneficial for ethnic groups. Recognizing the complexity and emotional baggage associated with this issue, he attempts to treat it as a set of possible conditions. First of all, Gumilev (1973b:396) requires that "ethnic systematics be substituted for ethnic classification," because a classification can be based on any criterion: language, race, religion, form of livelihood [occupation], or affiliation with a particular political state -- subjection. In all cases classification will be an arbitrary decision not inherent in the nature of things.

As a primary condition for assessing the value of inter-ethnic mating, identifying the scale, characteristics and circumstances of the people
and processes involved requires a systematic approach which "can reflect precisely the inherent character of things by investigating mankind in conjunction with its technology and domesticates." Introducing the notion of general systems theory seems to fit well within Marxism's inherently structuralist framework, albeit without recourse to the contemporary criticisms and subsequent recognized limitations of both the structuralist and general systems theory projects (Bennett, 1976; Buckley, 1967; McClelland, 1965). One would not expect, however, in a framework already dedicated to an all encompassing, deterministic explanation of cause and effect, that such considerations would deter Gumilev from building a correspondingly all-inclusive model. But here, under the introduction of "systematics" and its respective taxonomy, he gives the first definition of a superethnos.

The first, and highest order of the ethnogenic process is represented by what Gumilev terms the "Superethnos," and which he describes as:

the largest unit after mankind -- as the amorphous anthroposphere as a whole would be the superethnos -- i.e., a group of ethnoses that arise in a region at the same time and appear in history as a mosaical formation (1973b:396).

For our purposes, this definition would suit a general description of the Muslim or Chinese world systems. But how those distinctions are made, and affect the application and modification of this model, will be dealt with later. For the present, however, I can simply state that the region must be understood to encompass the periphery of the territory into which a primary ethnogenesis expanded, and the subsequent other major ethnogeneses within that enlarged region over an elongated period of time.

The second lower order of this systematic taxonomy is represented by the ethnos as a primary unit. Understanding that lower orders may, if not cut off prematurely, evolve into an ethnos, the superethnos must represent an even
rarer occurrence than ethnos, but one generally necessary for ensuring a certain
stability between adjoining ethnoses, yet at the same time capable of establi-
shing boundaries wider than, or more rigidly defined than those of ethnoses.
Though previously defined, this basic unit of ethnos is again defined by Gumi-
lev as representing,
a large, closed system with a dynamic behavioral stereotype and a
distinctive internal structure that changes with the various phases
in the process of ethnogenesis (1973b:396).

The third lower order, or subsystem, that of subethnos, essentially
either arises from even lower levels that, if not developing into full ethno-
ses, evolve under the wing, so to speak, of other ethnoses, or alternatively,
fragment off from the latter, as fledglings that generally do not mature out-
side of the shadow of their parent ethnos. Unfortunately, Gumilev gives no
examples or further definition of this unit beyond describing it as follows:

A subethnos would be one element in the structure of the ethnos that
interacts with the others. In the process of simplification of the
system during the phase of decline, the number of subethnoses tends
to drop to one, marking the persistent -- residual -- state of the
ethnos (1973b:396).

At the next lower, or fourth, level, are convixia, the transitional
units evolving from social into natural conditions of ethnos, although they too
may never reach full ethno-status. Gumilev describes these convixia as:

groups of people associated by common mores and family linkages,
which may be part either of the core of the ethnos or of one of its
subethnoses (1973b:396).

Convixia sit on an evolutionary 'hot seat', not necessarily surviving to the
next rung of the developmental ladder after having arisen from the next lower
order, consortia, which,

having become convixia ... may still exist for several generations
until they are either eaten away by endogamy or shuffled in the pro-
cess of succession, i.e. through the changes in the historical envir-
onment. Those groups that survive develop into ethnoses (1973b:396).
Finally the lowest, or fifth, order, the elemental core unit -- consortia -- are described by Gumilev (1973b:396) as,

'a group of people associated by a common historical destiny... which are usually unstable associations of different kinds -- study circles, work cooperatives, religious sects, criminal gangs, etc. -- arise and vanish rapidly, existing sometimes only a few months.

If there was a sixth level in the model, it would hypothetically be the nuclear family, and a seventh the individual, which has already been established in the thes as both a socially created subject, and a biologically, or naturally created, object. This biosocial individual exists in a condition of ethnos as a member of both socially and naturally constructed group relationships, although Gumilev has stated earlier that ethnos as a process dwells within the individual as a natural organism, hence may be hypothetically traced down to the psyche (central nervous system), or to biochemical or energetic, rhythmic processes within the corporeal subsystems. But even though the individual has a great amount of flexibility, and at all levels, social states may be encountered as well as historical processes interacting, as Gumilev puts it, with the natural

affiliation with any/particular subdivision of this taxonomy does not depend on complete identity among individuals, which never happens in nature, but on the degree of similarity in a particular aspect at the given level (1973b:397).

Having initially stated that, at its fullest expression, ethnos encompassed all of the human species, every member participating in the process at some level, Gumilev gives an example of his notion of similarity by comparing Homo sapiens as being closer to other species of mammals than to species of reptiles. Then, by analogy, he compares two competing multi-ethnic systems at the level of superethnos, the 13th century Muslim and Christian worlds, in which various Muslim ethnoses -- Berber, Turk, Arab, etc., as Gumilev (1973b:397) states that
Moslems were closer to one another than to members of the Western Christian superethnos, the Franks, as the Catholics of Western Europe were then called. On the other hand, the French, Castilian, [etc.], were closer to one another than to the Moslems or Eastern Orthodox.

This is a key point in our discussion, because here three "religious" systems are given as examples of superethnoses, a natural phenomenon. We can shift the notion of a religious system to that of an ethnic one, i.e., "religion" returns to its original Latin definition as the "ligare," or ritual ties that bind a people together. It represents a characteristic of both the category "a people," and by implication, an already existing "people," or an ethnos already constituted in more substantial ways. In one sense, an analogy can be drawn with the notion of base and superstructure, where ethnos is base and religion, as a social construction characteristic of a particular social formation, belongs to the superstructure.

**Principles of Unity and Divergence Among Ethnoses**

Gumilev now returns to the question of ethnic affiliation based on a mutual subconscious recognition of behavioral stereotypes, rather than conscious intentional choice. Here, he finds that within any taxonomic level, it is necessary to differentiate the concept of "degree of similarity" from "complete identity." Next, he takes "similarity" as the basis for the previously defined process, or act, of recognition, as there can never be a complete unity of identity in nature. And yet, perhaps a distinction continues to exist between discreet individual organisms of the group, no matter how hard wired in the brain and nervous system is the genetically transmitted closeness between members of a group of animals of the same species, i.e., a flock of birds, school of fish, or even hive of bees. Taking the analogy once again to the level of ethnos, as a human biological counterpart to analogous groupings in other species, Gumilev cites examples of Frenchmen who as an ethnos "were
closer to one another than to [another ethnos] the English," although, it still 
did not prevent the Burgundians from supporting Henry V and seizing 
Joan of Arc, even though they knew they were acting against their own 
people. The vast diversity of visible history should never be re-
duced simply to the question of ethnic unity (1973b:396).

Before proceeding with this argument to lower levels of analogy, we 
would want to know more about this question of ethnic unity. As we have seen 
in the model, and by generalized empirical examples, such a complete unity can 
never exist, as even "common sense" would tell us in our own experiences of 
family life. But, if we are dependent on "a degree of similarity in a particu-
lar aspect" of an ethnos at a particular level, with what does "similarity" 
significantly correlate and how do we measure it, along what scale, and by what 
criteria. Gumilev responds, in a manner of speaking, by stating that, within 
this melange of diversity constituting general history, or even the history of 
a particular ethnos,

ethnic unity . . . only sometimes emerges as the principal factor 
guiding human behavior. But together with others, it is always 
present as one of the key factors and it should therefore be consi-
dered as part of the character of man as a species and not simply one 
of the variations in the historical process (1973:397).

Here we find Gumilev proposing a more situational basis of recognition, wherein 
the ethnos constitutes one set of biosocial factors within which similar intent 
and a basis for interaction may be discovered, and out of which the basis for 
interaction may be constructed. Furthermore, in comparing "ethnic systematics" 
with "social classification," Gumilev finds that they seldom coincide, and yet 
each one provides a necessary perspective for a particular research approach.

Gumilev claims that from 

the point of view from which the chain of historical events is being 
examined . . . [and which] must also fit the purpose of the study and 
required order of approximation, [he has] worked out a systematic 
approach suitable for resolution of . . . ethnogenesis, (1973b:397).
Inter-ethnic Contacts

Within the operational structure of "ethno systematics," Gumilev investigates contacts between ethnoses at the level of relatively large scale, frequent, or constant communications. His strategy first identifies the level at which contact occurs. He also associates a greater stability with each increasing level of taxonic organization. When contacts occur at the lower levels of taxons,

a simple combination of two or more consortiums or conviviums is unstable . . . [and] results either in a breakdown of the group or in the formation of a stabler subethnos (1973b:397).

But at the next level -- subethnos, which we can now assume arise through a combination of less stable, lower-order associations -- contacts and combinations that involve both the social and reproductive mixing of individuals from differing subethnic formations result in what Gumilev terms "an unequal marriage." He gives examples of how the external spouse, brought within the subethnic association through marriage, or some relative equivalent, never achieves equal status as an insider, despite their previous status, thus

as late as the 19th century, Cossacks considered a marriage with a peasant or with a member of the nobility as being [both] unequal even though the latter may have been wealthier and socially more prominent than the Cossack (1973b:397).

Despite the fact that cross-ethnic marriage inequality seems a reasonable assumption, its relevance has yet to be clarified. Regardless of this problem, he seems adequately to demonstrate the inverse relationship between ethnic stability and equal acceptance of the outsider inherent in interethnic mixing at this level, as

... together with other subethnos, they formed stable ethnic entities on the basis of symbiosis, reinforced by endogamy. The more complex and widespread such an ethnic entity was, the more it gained in strength and resistance (1973b:397).

In the preceding statement, Gumilev implies that any ethnos is a combination
of subethnoses, within and between which intermarriage should be considered endogamous and capable of leading to greater stability, albeit a possible inequality of the exogamous, extralocal partner within the spouse's subethnic group. But can we also assume that the degree of distance also affects the level of "outsiderness" and hence the amount of inequality, heightened, that is, by greater social or ethnical distance. From a biological standpoint of behavioral stereotype, we would assume that greater ethnic distance proves more difficult for adaptation and hence would connote a stronger stigma of "other" and less equal attaching to the newly arrived spouse. But from the social perspective, even practitioners of a similar sub-ethnic behavioral style, coming from different clans with a history of feuding, might prove to be a threat to the social coherence of the group, and retain a greater degree of stigma, than an outsider coming from a greater ethno-behavioral distance, but with a less troublesome social identity.

What, now, is the relation between the inequality of the assimilated outsider and the degree of complexity and of stability of the ethno-formation at a particular level? We should probably assume that the inverse relationship between ethnic stability and equality of the outsider increases only up to a certain level, where a greater range of diversity within the larger ethnic group nullifies the prominence, and hence perceptible stigma, of the outsider brought within by extralocal exogamy. This would be explained by the principle of stability associated with increasing complexity, except that Gumilev seems to imply that it operates only on the ethnic level between differing, but internally stable, endogamous, and hence homogenous subethnoses. I find a real problem with the contradiction between assuming the value of diversity in stability and its counter, the value of homogeneity in stability, unless the distinguishing transformation involves levels at which one of these
relationships works better than the other in providing stability, and vice versa.

As to the relation of stability to diversity and similarity, Gumilev explains this phenomenon at the level of a social organism, as opposed to a superethnos, in which two or more ethnoses are combined and forced to live together. This particular relation would then be a state of "xenia," in which Gumilev (1973b:397) finds that trying to make the best out of it, but being at the same time drawn toward each other . . . [they] coexist, but without merging and without dividing their functions, which is characteristic of symbioses.

The question of whether this state is harmful or not is not really answered, although Gumilev certainly treats it as if it is, implying increased problems at each higher level of ethno-taxa. The argument jumps from the issue of heterogenous internal elements and their problematic, unequal, and hence destabilizing role in subethnoses, to contacts between non-similar ethnoses within a social organism without a transitional bridge. Gumilev implies that exogamy creates this problematic heterogeneity within the subethnos, but what role does it play at the larger level of ethnos. For that matter, what are the relationships between divergent subethnoses within an ethnic formation. On one hand we see them as stabilizing through providing diversity, hence complexity, and on the other hand, as unstable and, in fact destabilizing factors. This contradiction remains unresolved, as he makes a transition to the larger group and proposes that either frontier contact between different ethnic formations of the same taxonomic level or attempts at combining them within a common social organism will result in conflict, injury and further separation, or at least a non-symbiotic co-existence.

Moving the argument to the superethnos level, Gumilev (1973b:398) finds that contact between two superethnoses results in greater conflict and
often results not only in ethnic annihilation, but in a population
decline, as the weaker group dies out because of unbearable condi-
tions or is simply physically exterminated.

He gives several examples of such contacts, where, as with the indigenous
peoples of the Americas, Australia, Southern China and the Great Eurasian
steppe, the results ended in a decimation of the affected, weaker ethnoses.

Examining the historical circumstances of contacts between ethnic formations of
the steppe and the agrarian, Han Chinese, Gumilev finds that they

existed side by side from the 3rd century B.C. until the 3rd century
A.D.. Each ethnose lived in its own landscape, but together with its
neighbors formed the superethnic structures of nomadic culture and
Far Eastern civilization, [moreover], both structures were polyethnic

Over time, these two vast ensembles of ethnoses and landscape underwent transfor-
mations and contacts which resulted in long term cohesion and hegemonic success
for the Han, while resulting in fragmentation and loss of power for the steppe
peoples. But interpreted in ethnogenic terms, Gumilev (1973b:369) states,

the prolonged existence of these superethnoses linked by a common
culture led contemporaries to consider themselves as [political]
states, but they [actually] represented slowly evolving processes.

Citing his book Aхунъъ и Кита (the Huns in China) as a source for
further data, analysed according to the ethnological process, Gumilev basically
describes how the Chinese evolved a unified superethnos within the framework of
a political state. This process absorbed minor ethnoses into a dynamic, Chin-
ese superethnos and aggravated class conflicts to a point of antagonism which
combined to reduce the population by more than 60 percent in the 3rd century B.
C., while the breakup of the empire in the 3rd century A. D. again reduced the
population, this time by more than 80 percent (1973b:398). In the depopulated
Northwestern frontier landscape, the Tsin dynasty allowed and encouraged the
settlement of just under a million nomads who had already been migrating in
that direction because of increasing drought and reduced pasturage further
West. Meanwhile, between the 1st and 3rd centuries A.D., a shifting climate caused a slow degeneration of the steppe ecology and the nomadic environment, while the tribal system correspondingly decayed so slowly as to cause little change in the ethnic structure. As the two superethnoses came to share a territorial and political arena, their motivations and responses differed. Gumilev explains the Ts'in motivation by claiming that

the Chinese political leaders of the 3rd century felt that ethnic affiliation was a social state and that numerically negligible enclaves would be easily assimilated: just teach the princes some culture, and the tribes will turn into subject estates (1973b:398).

What actually occurred was quite different from what the Chinese officials had planned. Despite suffering "arbitrary exploitation by officials and landowners," the tribesmen "did not turn into Chinese," while their princes, who did study Chinese, "rejoined their tribes and led a rebellion to regain their lost rights through force of arms." This miscalculation on the part of Ts'in officials caused a Chinese retreat southward in the face of the Huns' seizure of all North China. Correspondingly, the retreat triggered an intermixing with the Man tribes in the South, producing a new Southern Chinese ethnos, while those remaining in the North "mixed with the Huns, ... eventually gaining the upper hand," but causing a split and greater divergence within the Chinese superethnos that only reconverged at a later time. Here Gumilev again sounds like Ibn Khaldun in his description of the disintegration of the conquering nomads, in this case, the Hunnish ethnos:

The children produced by the victorious Hunnish warriors and Chinese women soon forgot about the mores of the steppe. Raised in palatial pavilions, they retained energy and courage, but lost the feeling of their own worth, their esprit de corps, the imperative of loyalty. Feuds began to sap their strength, even though their fathers had managed to live in concord. Their grandchildren turned into spoiled courtiers who engaged in cutthroat rivalries and betrayed their own kin. No one thought any longer of offensive wars: the Huns suffered defeat even in defensive conflicts (1973b:399).
When the Chinese finally resumed power in a revolt against the degenerate, semi-Hunnish elite, the new emperor ordered a massacre of the remaining Huns, which "was carried out with such alacrity that many bearded and hook-nosed Chinese also lost their lives." Here we see a similarity between this attack on the Chinese with more "Western" features and what happened after the Mongol Yuan dynasty's defeat and the reassertion of ethnic Chinese domination, in attacks on Hui and other Chinese with those features, as reported in the Annals of the 15th century (Rossabi, 1979).

The cycle continued, as the previously victorious Chinese were soon overcome by the Sien-pi and Mu-yung nomads. Gumilev attributes this Chinese loss to the fact that "despite their numerical superiority, they too, had lost the traditions of their former military valor together with their national culture." But in turn the Mu-yung became sinicized and "suffered the same fate as the Huns," that is, being defeated by a new steppe confederation, the Tabgach. Repeating itself once more, the cycle turned on the Tabgach, who were overthrown in a brutal period which again reduced the country's population by 80 percent. Gumilev blames these disasters on the mixing of two superethnoses. Finally, in the 6th century, Tabgach remnants, having adopted Buddhism and the Chinese language "suddenly combined into a new ethnos," and formed the Tang dynasty which began a new ethnogenic cycle, laying "the basis for a medieval Chinese ethnos that retained its independence until the Manchu conquest in the 17th century." Gumilev seems to have ignored the impact of the Mongols on the Chinese during the 13th century, although the point here seems to be in how the data is used, rather than the specifics of its historical accuracy.

Interpreting this cyclical series of contacts, conquests and assimilations between Steppe and Han peoples, Gumilev (1973b:399) states a major proposition here: "If ethnoses are processes, then the clash between two
dissimilar processes creates interference that disturbs the rhythm of both components." This statement can be taken to represent the underlying principle at work on all levels of ethnosc. That is, at the subethnos level, mixing resulting from exogamy created an interference in the rhythm of the unit into which the outsiders were absorbed, weakening its internal coherence as a reproductive transmitter of a single, adaptive behavioral pattern. At the highest level, associations between superethnoses tend to be short, unstable, or chimeral . . . in the face of outside influences. The collapse of a chimeral system leads to both annihilation of its components and the dying out of people who had been drawn into such a system. Such would be the general mechanism of destruction of the given regularity (1973b:399).

Though finding exceptions to this pattern which ends regularities, and which may give rise to tremors that generate a new rhythm, or "new inertial process of ethnogenesis," Gumilev passes on to a further discussion in order to repeat the conclusion that

preservation of ethnic conditions requires endogamy because an endogamous family transmits to a child one tested behavioral stereotype, while an exogamous family transmits two that mutually enrich each other (1973b:400).

The argument has still not been made convincing, especially as we might ask how "mutual enrichment" damages an ethnosc.

We can finally include the preceding table of ethnic hierarchy in its place within Gumilev's argument regarding its necessary principle of similarity, and the generally negative effects of exogamy on any ethnic formation at any level. But in returning to the question of what negative effects are conveyed by exogamous mixing, Gumilev continues to argue that, "even in those rare cases where a new ethnosc arises in the contact zone [between two superethnoses], it will absorb, i.e. destroy, the two previous groupings," (1973b:400). Unfortunately, from the tone of Gumilev's argument, one might
think that he calls for protecting ethnoses from mixing that destroys them, whereas actually he tends to see this from a natural historian’s perspective, as part of a larger, general process of erosion, where ethnoses will eventually disappear from either internal or external causes. What he projects is an explanation based in biological as well as social causes for the successive rise and fall of peoples, nations or ethnoses as distinct, recognizable convergences of individuals assembled around specific ensembles of behavioral stereotypes and social institutions, i.e. codes and conventions, adaptive to, and of, particular landscapes. Again, in the Han - Hun example, he eschews the invocation of any racial principle here, because,

in the great majority of cases, we are not dealing here with somatic differences, but with behavioral ones, ... [since] the Huns, after having conquered the Yellow river valley, used it to graze their stock; the Chinese built canals and raised crops, and their interbred descendants, lacking both the herding and the farming tradition, lived off their neighbors and subjects, this led to the abandonment of land and the restoration of natural life communities, even though [also to] impoverishment by the felling of trees and the shooting of hoofed mammals during imperial hunts (1973b:401).

Drawing still on the preceding example, Gumilev gives another explanation of what he means by behavioral stereotype, and how he assesses its effects on the natural side of human activity. Just how far we can take this analogy of intermixing loosing the adaptive pattern of a group remains to be seen, and yet it can also be viewed in re-adaptive terms, i.e. the mixed group finds a new adaptive strategy, albeit a less productive one. Here we find a subtext in Gumilev’s notion that, hypothetically, a normal, endogamous, and hence stable, ethnos, will be in adaptive harmony. As such, it is also in a state of relative equilibrium with the environment which it has partially created, as landscape, in response to a necessary biosocial adaptation on its part to that environment. Its particular behavioral stereotype represents a specific natural adaptation, merging people and landscape together as an
ethnos. The biggest problem in this model, however, arises from reifying the concept of ethnos, as if "it" has a consciousness as a social organism. Second, there must be an ever present difference between an "ideal" symbiosis of ethnos and landscape, and a process of continual struggle that never more than statistically approximates any true equilibrium.

On a larger time scale, Gumilev introduces a notion of "regularity" (cf., his earlier comment, p.122, "the chimera is a mechanism for destruction of the given regularity"), but as he also points out, it is not "some sort of ethnic Brownian movement, but . . . a regularity that lends itself to building a model," (1973b:401). To illustrate this nomothetic model of regularity, he gives an example of Ottoman Turkish ethnogenesis. Briefly, a consortium of tribesmen, gathered around Ertughrul, wandered around 13th century Anatolia, settled near Bursa and attracted free lance warriors to raid the Byzantine (superethnos) empire, and evolving "into a subethnos within the ethnos of Iconium Seljuks." In the 14th century they seized large Byzantine territories, rapidly multiplied through polygamy, turned into the Ottoman ethnos, created social institutions and expanded into an empire. While meeting all the criteria of an ethnos, the Ottomans warriors had no single unifying language, hearing Turkish military commands, speaking Georgian or Greek with mothers, Armenian in the Bazaar, reading Persian poetry, and praying in Arabic. But the Ottoman was "a Turk," because he behaved like a Turk. Here, Gumilev (1973b: 401) finds it inconceivable that this Turkish world could be viewed as "a state," because all of its power subsequently eroded, the Ottoman ethnos vanished, for the modern Turks are not descended from the Ottomans, but from the Seljuks, whose development lagged after they had been conquered by Mohammed II in the 15th century.

Interpreting the data, Gumilev attempts to explain the phenomenon of Ottoman decline in terms of ethnic history, as a process, rather than a state. He also
claims that 16th century Turks held views similar to Artamonov's,

that all one had to do to become a real Turk was to accept the teachings of Islam and the power of the sultan. In other words, they regarded ethnic affiliation as a "state" that could be altered at will . . . [thus] readily accepted the service of any adventurer as long as he was well versed in a trade or in the military art (1973b:401).

In the following century, however, the decline of Ottoman power was blamed on the children of these renegade mercenaries. Gumilev states that

while desertion within a superethnos was not regarded as treason, going over to the Moslems did deprive a renegade of his ethnic affiliation, [but not his basal ethnic rhythm, hence] . . . these outsiders diluted the Ottoman ethnics . . . [which] tended to alter the behavioral stereotype and led to venality . . . corruption . . . decline of valor . . . and collapse of the economy (1973b:401).

Gumilev cites V. D. Smirnov's study of 17th century Ottoman writers, who assessed the situation in those terms, castigating these European converts to Islam and the Ottoman system as having no moral conviction and benefitting from the Ottoman's earlier acquisition of power. These renegades were portrayed, despite notable exceptions like Barbarossa and Kopru, as having no empathy for either the system or their rulers. As Gumilev (1973b:402) states, they were

without any sympathy for the people over which they ruled, they lived a purely sensual life; harems intrigue were their substitute for the real politics . . . of any genuine citizen . . . their feeling of duty was limited to finding legitimate pretexts for covering up their own misdeeds without risking to become the victim of others like them . . . though Ottoman in name, they never became Ottoman in reality.

To interpret this situation of social instability and corruption in ethnogenic terms, Gumilev introduces the factor of class conflict in the social domain, aggravated by the mercenary crisis, as the vector both for Ottoman ethnogenesis, and in conjunction with a decaying behavioral stereotype, also for its demise. Together, they also were

a factor in the man-made breakup of the landscape, as harrassed peasantry abandoned their plots, neglected irrigation works and thus turned the once wealthy country into a wasteland (1973b:402).

Not only did the Ottoman ethnics suffer from this decadence, which partially
brought about its decline, but as

 similar situations developed in Rome and Persia . . . but, because of
 endogamy as an ethnic barrier, these [ethnic] processes proceeded
 more slowly, [as] for an ethnos, it makes a difference, after all,
 whether it exists for 300 years or a thousand (1973b:402).

 Again, the factor of endogamy arises as the key feature in maintaining an
 internal stability within the ethnos. We must continue to stress its biologi-
 cal consequences, as despite its effects on the social structure, it is at the
 population level that the behavioral stereotypes are developed and reproduced
 as adaptive patterns. The absolute size of any population within a social
 state, which may maintain its territorial distribution despite ethnic changes,
 also may or may not change as a result of ethnic decline and its absorption
 into surrounding ethnoses, but boundaries between ethnoses as processes and
 socio-political entities as states call for a further and separate discussion.

 What matters in this example of the Ottomans, and for a testing of
 the ethnogenic model in relation to the Muslim world, is whether or not the
 role of a behavioral stereotype is diffused throughout the larger super ethnic
 entity. Such a distribution reduces the direct impact of exogamy on each
 subordinate level of ethnic population by absorbing the "erosion" upwards into
 a dominant, but less concentrate pattern of traditions. If, therefore, the
 Ottoman behavioral stereotype was assimilated and diffused throughout a vastly
 larger linked ensemble, or mosaic, of Muslim ethnoses, and was in turn a
 recipient for other behavioral stereotypes transmitted throughout the system,
 an adaptive mechanism would adopt those elements more conducive to survival.

 The entire system would thus be working towards an equilibrium between all its
 parts and inhabited landscapes, through a constant circulation of ancient
 primary, reinterpreted, and new traditions acting as behavioral stereotypes,
 available to any subordinate ethnic system to adopt as met its particular needs
at any one time. In turn, despite a natural decline of any ethnos, its behavioral stereotype would have had an impact on the entire system, would have been made available to other ethnoses, and would remain in vestigial form as elements scattered throughout the larger system even after the original ethno- genesis, and indeed even the ethnos as carrier, had long passed into a relic stage or disappeared. The Turks, then, may have declined in consequences of heteroethnic, polyglot exogamous influences, yet have served as a set of niches, or communication opportunities within the larger Muslim world system.

Concluding his critique of "state" as a proposed category for ethnos, Gumilev finds further cause for rejecting Artamonov's argument, in that not only theoretical considerations, but the need for interpreting actual data requires that we reject the concept of ethnos as "state." And if an ethnos represents a long-term process, then it must be part of the earth's biosphere; and since the processes and phases of ethno- genesis are associated with changes in landscape through the use of technology, ethnology must be considered one of the geographical disciplines both in object -- the ethnosphere as one of the shells of the earth -- and in method, even though it takes its primary data from history in the narrow meaning of the word, i.e. by investigating events in their interconnection and sequence (1973b:402). Furthermore, he finds that Artamonov tends to think of ethnos in its archaeo- logical, or dead, cultural state as a collection of relic material artifacts reflecting past social entities. But the demands of ethnology exceed those of archeology, yet it cannot study ancient or vanished ethnoses without recourse to the latter discipline. On the other hand, the interpretive aspects of archeology in reconstructing past landscapes, cultures, and social organiza- tions can profit from the results, if not the methods, of ethno-geography.

Before moving on to the next section in which Gumilev's notions on the "nature of ethnic wholeness" are explored, the critical issue that needs much further discussion in this section is that enigmatic concept of similarity. We have found several attempts to bracket the nature of similarity, but
still no concrete theoretical examples or propositions about its phenomenological existence. As in the language of systems, this aspect of the model represents a "black box." At best, we can construct the following proposition from what Gumilev has told us about the contents of this black box.

First, complementarity is the principle feature of an attraction between two communicators recognizing a similar behavioral stereotype embodied and expressed in the rhythms of their mutual communicative behavior. Second, the basis of that complementarity is biosocial and can be described as ethnos. It is, however, only one set of factors involved in the social interaction between individuals where each person carries an ensemble of code fragments enabling a "match-up" with another communicator. The dominant code element triggering recognition is variable and situational, as is the quality and quantity of recognized similarity and the extent to which it is acted upon. In fact, we have arrived independently at what Sperber and Wilson (1986) refer to as the principle of "relevance," which refers to the combination of a shared sense of a situationally appropriate display made from the communicators' repertoires. Whether Gumilev is aware of the implications his theory holds for communications theory and the possible correlations is an unknown factor. As he does not mention contemporary Soviet linguistics researchers, i.e., Vygotsky, or the earlier formalist or Bakhtian schools, nor any school of psycholinguistics or sociolinguistics, the connection either is not of interest to him or not mentioned for other, possibly political, reasons.

In conclusion, the key to Gumilev's broadly ranging propositions involves recognition of similarity, and by inference, of difference between individuals, and as such, can be viewed in communications terms. He also proposes that, as a biological population, ethnos results from a mutual attraction generated by recognized shared similarities of an ecologically based
co-adaptation between the ethnos and a particular landscape. This process is amplified by endogamy and shared genes which result in a unique behavioral stereotype. The total sensate being is involved in a recognition process, and if we carried it to a biological extreme, which Gumilev avoids as reductionist, we would end up with the sociobiological basis of ethnos proposed by van den Berghe (1982) who explains ethnos as a genetically programmed, inherited propensity to favor close kin in altruistic behavior. In contrast, the following table (Fig 10) lays out Gumilev's classification of ethnic hierarchy and corresponding attributes.

<table>
<thead>
<tr>
<th>Order</th>
<th>Hybrid</th>
<th>Direction of Development</th>
<th>Culminating Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Consortium</td>
<td>Unstable associations</td>
<td>Towards social institutions</td>
</tr>
<tr>
<td>II</td>
<td>Convixium</td>
<td>Deformed associations</td>
<td>Toward territorial community</td>
</tr>
<tr>
<td>III</td>
<td>Subethnos</td>
<td>Symbioses</td>
<td>Toward ethnic self-determination</td>
</tr>
<tr>
<td>IV</td>
<td>Ethnos</td>
<td>Xenia</td>
<td>Creation of social organism</td>
</tr>
<tr>
<td>V</td>
<td>Superethnos</td>
<td>Chimera</td>
<td>Annihilation</td>
</tr>
<tr>
<td>VI</td>
<td>Mankind</td>
<td>Hypothetical mixing with Palaeoanthropus in the Mesolithic on Mt. Carmel</td>
<td>Ethnogenesis</td>
</tr>
<tr>
<td>VII</td>
<td>Hominids</td>
<td>?</td>
<td>Evolution</td>
</tr>
</tbody>
</table>

source: Gumilev, 1973a:400.
In the other direction, we find a social determinism that ignores the whole biological basis of communicative behavior, by reducing ethnos to a combination of situational social relations and surface, or cognitive, similarities motivated and manipulated by an intent to gain, or enhance personal opportunity. In Gumilev's attempt at a dialectical synthesis, he tries to resolve the contradictions in these divergent approaches by recognizing the value in each set of claims -- social and biological, beyond which we now venture, turning to the next chapter on the systematics of ethnic wholeness.
CHAPTER XIV

ON THE NATURE OF ETHNIC WHOLENESS

Underlying the entire argument on ethnogenesis, Gumilev has implied the existence of some systematic organization based on an analogy to the natural sciences. From an ethnological position already situated in natural science, he criticizes other ethnographers, historians and simple observers of the phenomenon of ethnogenesis . . . [who] without doubting its reality, have not been able to offer a satisfactory definition of the concept of 'ethnos' as such. [because their] definitions always contained the same distinctive features, such as language, origin, culture, political statehood, [etc.] . . . But . . . these features and traits simply referred to the fact of ethnic distinctions and were not invariable attributes of the phenomenon of ethnos (1973c:467).

Gumilev criticizes the very sociological determinism which has dominated most "ethnic studies" in the late 20th century. Geographers and anthropologists have shied away from the "natural" designation of ethnoses which had preceded them through the early 20th century. This almost totemically, primitive denigration of the previous generation of science may be more akin to what a conquering tribe does to the religion of its predecessors, than the more rational "paradigm shift" proposed by Kuhn and followers. But if the sum of scholarly and scientific knowledge is growing, then an admission of the duality by which reality is socially constructed within a naturally constituted social creature may be coming of age and thus Gumilev's stand in rejecting those surface
characteristics of ethnos for a return to natural science may herald a new synthesis. Indeed, research findings from neurochemistry to ethology that demonstrate the biological basis of human behavior becomes an increasingly recognizable factor within North American social sciences. Given the main source of Soviet opposition to Gumilev's ideas, it is ironic that in the West some self-styled Marxists have fiercely opposed biosocial approaches to human behavior. These so-called materialists propound an alternative social determinism that emphasizes cognitive dominance, a stance parallel to die-hard "moralists," as Schilcher and Tennant (1984:156) call those opponents of what Lopreato (1984:16) refers to as "the Modern Synthesis." Nevertheless, scholars working within this "modern synthesis," or materialist science, are taking a "realist" stance and have created new epistemological pathways, especially in anthropology and archaeology (cf. Butzer, 1982). In this regard, Gumilev's significance is that he represents a cross-over from the idealized "materialism" of Soviet science towards this new biosocial synthesis.

In Gumilev's view, the failure of socially based approaches was due to the lack of an appropriate methodology which could enable researchers to develop a theory of invariable ethnic properties. The biologists fare no better, as he accuses them of failing to approach the issue of ethnos, but instead of vacillating "agonizingly and aimlessly between theories of mechanism and vitalism," neither of which offered any concrete solutions (1973c:467). In contrast, Gumilev (1973c:467) claims that his method explains the causes of ethnogenesis, in its invariable properties as a known, recurrent process, through which ethnoses "arise, pass through phases of development, and then vanish." He also claims that because "the degrees of proximity between ethnoses tend to vary quite evenly ... a mechanical systematics of ethnoses can be built," and thus by identifying invariable phases in all processes of ethnos
this model provides a basis for describing the mechanics and regularity of the ethnogenic process.

The systematic nature of ethnic wholeness can now be discussed as a holistic process on the basis of what Gumilev calls "mechanical systematics," a method derived from general systems theory. His previous definitions of ethnogenesis were essentially descriptions of the process, its general attributes, regularities and surface characteristics. But he now claims that mechanical systematics can be used to define a theory of ethnos based on its invariable attributes. Two interrelated points of invariability are addressed by this definition; the repeated similarity of attributes at every subordinate level of a system, including the interaction of ethnos with both the landscape and technosphere, at every level.

The Regularity of Ethnoprocesses at all Levels of Taxonomy

Using the terms of mechanical systematics, we can now take up the first invariable attribute of the ethnic phenomenon, its similarity throughout the taxa. First, the ethnic process, as an energy flow ranges through the species as a whole, varying its frequencies or pattern according to location, time, and level of apprehension. At the next largest level of organization beneath the species, these ethnoprocesses are manifest as a superethnos which Gumilev (1973c:468) defines as "clusters of ethnoses that are similar in structure, in their behavioral stereotype and in genesis, and subethnoses corresponding to subdivisions within the ethnos." As another species would have a different, and unique, set of similarities in organization (e.g., flocks, schools, etc.), the processes by which its sub-species units were formed would involve particular biorhythms, thus enabling appropriate segmentation for adaptive survival and natural selection. Correspondingly, the key elements of
similarity found in a superethnos involve both a particular rhythmic energy and its manifestation as structure, tradition and genetic history, which extend throughout all its subordinate levels of systemic organization. As a process, however, the energy source of ethnos is actually derived from beyond the bounds of the species. Likewise, it continues through into a microcosmic level, descending below even the individual organisms and, as Gumilev states, ethnos, like an atom, is diminishable to infinity since even a single person is not the limit, [because] at various ages a person tends to behave differently so that his behavior is variable (1973c:468).

If, according to Gumilev, all forms of natural and social motion of matter meet within the human body, then we must assume a resonance between these processes. Ethnos, which has already been identified as a natural process, must then be considered either a uniquely human convergence of biological, chemical and physical energies, or an emergent property of that resonance. In either case, this process creates behavioral stereotypes among individuals, who, by way of signal heredity (i.e., traditions), reproduce those patterns of traits through their offspring and maintain them through institutions and artifacts. But in order to change both situationally and within the course of an individual life cycle, these behavioral stereotypes must be embedded in the organic rhythms of social communications and biochemical energies flowing throughout the organism. The impact of this energetic process on behavioral patterning and the organism's biorhythms must also vary physiologically, affecting various bodily organs, the central nervous system and other anatomical elements according to the innate drive constituting a particular superethnos. Therefore, we must assume that this primary human pulse, or ethnogenic process, is manifested in interactional rhythms that are refracted through the central nervous system and regulate the rhythmic pulses and interaction of the organism within its biocenosis and in communication with other organisms.
Levels of Ethogenesis Accessible to the Research Method

The proposed energetic process of ethnos is not as simple as sharing a common language or intentionally manipulated identity. Gumilev identifies one facet of its existence as "the urge to transform one's environment arising from complex reasons that are not at all obvious at the surface of the observed phenomena." Though not describing exactly how it can be observed in the superethnos, he claims that this energetic process is manifested by the superethnos as a unique social phenomenon within the anthroposphere. Involving both landscape and history, this process gives rise to

the appearance of previously non-existent forms, structures and behavioral stereotypes that do not culminate in the historical density postulated for ethnos, but represent a totally new phenomenon, which by the very fact of its existence tends to alter the customary historical picture (1973c:468).

When this "new phenomenon" arises out of an emergent behavioral pattern and diffuses throughout an increasingly interconnected web of ethnic entities, it presents a perceptible surface as a larger pattern (superethnos). Here, Gumilev remains vague as to what constitute the internal structure and linkage of this pattern. Having emerged from the dynamic interaction between evolving behavioral stereotypes, and incorporating elements from distinct levels of ethnic activity, this unique surface pattern would have a perceivable impact on its encompassing landscape. Similarly, its internal structure and activities would be manifested in material and cultural artifacts. Such a process would also have an impact on other superethnic entities through activities leading to direct encounters, and indirectly through its impacts on the biosphere due to co-evolutionary social and landscape adaptations. Changes involving human social history would also affect the entire anthroposphere and general technosphere. Therefore, as Gumilev states, at the superethnos level
ethnogenesis assumes all the qualities of a natural phenomenon since it arises not out of the historical process, but itself gives rise to a new chain of regularities in ethnic history that after many centuries damps down to a homeostatic equilibrium (1973a:468).

According to Gumilev a "new chain of regularities" would seem to be the attribute most prominently observable as a manifestation of the energetic process at the level of superethnic organization. But "regularities" can also refer to modifications of biological clocks within the system, new stereotypes of interactional behavior, or traditions, as well as to the historical sequences arising from the impact of the energetic process on surrounding systems. Therefore, these interconnected regularities and causal chains must correspond to lifecycles of superethnoses. Taken together, these interactive phenomena, e.g., sequences of climate change affecting human activity and economic cycles such as Kondratieff waves, etc., create history through ethnic processes.

Ethnogenic Manifestations at Lower Taxonic Orders

The level of subethnos, according to Gumilev, proves more accessible to immediate observation. Here, he does not specify how they are observable, except that while they "usually form parts of ethnoses, they may also function as isolates." At the level of ethnoses (the primary taxon), however, Gumilev states that they function

at the level of competence of the historian... and may either be developing or perishing, whether through divisions or through mergers with one another. In any case, these changes represent simply a rearrangement of existing elements giving rise to fanciful, distinctive collisions, rather than a creative process giving rise to something that did not exist (1973c:468).

Contrary to the level of superethnos where a cumulative effect of emergent properties creates a "totally new phenomenon," the next lower order would seem to be incapable of any greater activity than readapting existing traditions. This proposition seems to contradict the principle of similarity at all levels.
and the results of that similarity. Moreover, the principle of emergent properties in holistic systems calls for a unique arrangement at each level manifesting qualities greater than the sum of subordinate components, hence a new phenomenon. Gumilev, however, finds that new manifestations of the process "appear" at the superethnos level, while subethnoses are "observable" to ethno- graphic investigation, and ethnoses remain "fanciful, distinctive collisions." It is possible that he refers here not to the absolute new phenomenon, but rather to its observable manifestation. But he does not say whether or not ethnoses are perceivable, or how, nor does he give any reason why each level has such attributes. Nevertheless, we can speculate that what most ethnographers "see" in the subethnoses are their visible manifestations embedded in a locale, its culture and artifacts. Finally, for a "sub" ethnos to function as an isolate, it must either be at an immature stage of its progress, suffer from arrested development, exist as a relic of an ethnos far in decline, or have been spatially fragmented from an ethnos without any contact: in any case, it could not have been absorbed into the "field" of a more dynamic ethnos, which would have, a priori, ended its isolation.

Linkage Between Ethnogenesis, Landscape and Technosphere

We now come to the second point in this argument: how is the ethnogenic process at every level tied to the landscape and technosphere. According to Gumilev (1973c:468), "these linkages are not accidental and depend on the character of adaptation and level of development of productive forces." Here, he makes an analogy between ethnogenic transformations as mutations in human organization, and natural physical convulsions. Citing Vernadsky, Gumilev (1973c:468) implies a biosocially interactive regularity, in that
ethnos is not a random collection of people, but a distinctive phenomenon in the earth's geographical shell that gives rise to transformations comparable in magnitude to small-scale geological upheavals.

Not only does ethnogenesis produces such impacts on the landscape, but, Gumilev (1973a:438) claims, the urge to transform one's environment exists in relation to natural environments, "by way of creating anthropogenic landscapes," and to ethnic environments, "by way of wars and migrations." From the fabric of his argument, Gumilev would have us believe that this "urge" is more than either a simple genetic propensity for nesting and territoriality, or cognitively constructed social intention. It is, he argues, a motivational dialectic weaving the two together, despite the fact that some social aspects can always be correlated with biological regularities... Alone the diversity of ethnic types and distribution of man over the entire land area of the earth suggests a distinctive line of evolution in Homo sapiens, in which phylogenesis becomes transformed into ethnogenesis (1973c:438).

Here we have encountered a most complex proposition, the transformation of phylogenesis to ethnogenesis. Several questions arise. First, how is this analogy developed and by what comparable mechanism does it operate. Second, by "phylogeny," does Gumilev mean something more than just the simple racial history, or evolutionary development, of a genetically related group of organisms. We might assume that he means the evolutionary relationships and traits acquired in the development of a direct line of descent within a particular group, phenotypically united by those related genetic and behavioral traits. But he denies that ethnogenesis is the same as the process responsible for either the genotype or phenotype, claiming (1973c:472) that the connection between individuals is a learned ethnic rhythm by which the similarity of one's own kind is recognized, and which cannot be accounted for by transmitted genotypes. If, however, by phenotype we mean the particularly visible aspects of an organism that are produced by the interaction between genotype and
environment, then Gumilev (1973c:593) differentiates between it and ethnos. He also claims that the latter is not even affected by it, as bursts of ethnic drive "affect the stereotype of behavior of the ethnos, but have no impact on the phenotype." What then can account for the transformation of phylogenesis into ethnogenesis.

We must assume that the analogy between phylogenesis and ethnogenic processes lies in the taxonomic structure by which individuals are related at increasing orders of magnitude, or aggregation, through a shared set of behavioral traits inherited as related traditions. This would be, from Gumilev's argument, most obvious at the superethnos level with its "new forms, structures and stereotypes of behavior." The superethnos, then, represents the primary phylum, and as such, is a rare occurrence. It also arises through energetic shocks or bursts derived from the biocenosis of the biosphere and thus from natural, rather than historical, processes. Moreover, as these superethnogenic bursts are rare, "the most ancient are known to us only from the middle and terminal phases of the process" (1973c:468). We might, however, want to consider an analogy between phylogenesis and speciation in protohominids and the ethnogenesis of H. sapiens to see if any evolutionary tendencies appear as a logical chain of regularities.

Hominid Evolutionary Transformation: Phylogenesis to Ethnogenesis

Comparing Gumilev's work to current scientific thought in the area of evolutionary biology, he represents a bridge between the earlier science of Vernadskiy and a highly contemporary reconstruction of classificatory models and evolutionary mechanisms, seeming to bypass the mid-century stasis in biological theory. Brooks and Wiley (1986:194) view the convergence of biological theory corresponding to its simultaneous growing divergence in subdisciplines
as a process in which Vavilov's ideas would seem to fit well. Even if he is making "educated guesses" from empirical generalizations, his intuition seems to project him directly into the cutting edge of a new synthesis in the natural science of H. sapiens. The role of ethnogenesis as a progressive transformation from phylogenesis, and the corresponding "natural selection" by which ethnic units arise, develop and decline, would correlate well to what Brooks and Wiley (1986:194-198) state as the following contemporary model:

Within-species evolution results from an array of intrinsic and extrinsic factors. Since the intrinsic forces are inherently irreversible, we accord them with the status of ultimate mechanistic, or axiomatic causes. These include reproduction, mutation, canalizing selection, and perhaps evolution. Phenomenological descriptions of evolutionary changes brought about by these factors should be characterized by a constrained increase in information entropy . . . changes in reproductive ties . . . [and] the interaction of information and cohesion should produce highly complex organized species.

This historically determined emergent organization can be affected by proximal effects generally called environmental selection. Since the essence of emergent organization is historical constraint, the aspects of a population's information and cohesion systems that can be complemented by directional selection will be predominantly the historically determined ones . . . [But] if selection overrides the genealogical continuum, there is no opportunity for emergent organization to continue or to be maintained . . . In the long-term the population would remain less than optimally stable, and thus more susceptible to catastrophic occurrences.

Phylogenesis involves a progression from speciation to subspeciation, generally assumed for H. sapiens to apply to race. This concept, however, has been rejected by Gumilev, who demonstrates that race has no behavioral characteristic and may adapt to any phenotype or behavioral stereotype transmitted through either cultural learning or signal heredity. Ethnos provides the particular structure for a behaviorally based, environmentally related, but non-phenotypic, phylogenetic division of H. sapiens. If, however, protohominids shared in a similar phylogenesis, how would their natural history compare to ethnogenesis, and what intraspecies taxonomy would they develop and even
share. How would their internal structure and taxonomy evolve towards H. sapiens, given natural selection continuing on up through the hominid line including H. sapiens, as Gumilev argues. Can we then attribute either phylogenesis or ethnogeneisis to the energetic phenomenon of biocenosis which pulses through environments and in turn is refracted through the (human) organism into psychic energy. Is this energetic process manifested in other species, e.g., in the phylogenetic divisions of speciation and sub-speciation in other hominids, or is it distinct to H. sapiens. If we are to accept Gumilev's theory as natural history, then these questions are relevant in attempting to establish evolutionary homologies.

One major problem in this area inadequately addressed by Gumilev is the relation between ontogeny and phylogeny, as Schilcher and Tennant (1984:64) state the well known 'truisms' that, "no phylogenetic change can come about unless ontogenesis -- that is patterns of individual growth -- alter. " Does Gumilev place ethnogeny between the two as a mediating factor, or does he propose a non-physical model, i.e. tradition as ontogeny. Schilcher and Tennant (1984:68) find that contemporary theory succeeds Haeckel's maxim that "ontogeny recapitulates phylogeny," stating that "new traits can accrue at any ontogenetic stage and not all old traits have to be maintained in the way he [Haeckel] envisages." They follow up this opening of the phylogenetic paradigm citing the alternative to Haeckel's maxim proposed by von Baer, that

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\text{Ontogeny does not recapitulate adult stages of phylogenetic forebears. Rather, the ontogeny of descendants preserves elements of the ontogeny of ancestors,} \quad (1984:102).
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Schilcher and Tennant go on to review several current reformations of Haeckel's basic question, "What forces the epigenetic system to preserve its own history." Gumilev's work falls well within this nexus of "a systems-analytical approach to macro-evolutionary phenomena," especially given the reversibility
of traits despite the overall progress of evolution. This middle ground taken by Gumilev on the issue of how phylogenesis is related to ontogenesis through ethnogenesis, finds support from (Eldredge and Cracraft, 1980:10) in

the third school, [of contemporary taxonomy] "cladistics," or "phylogenetic systematics," [which] seems in many respects to occupy an intermediate position... [in] the definition and recognition of monophyletic groups... the search for nested sets of evolutionary novelties depicted on branching diagrams called "cladograms"

These "clades" or patterns, and their corresponding "sigenesis" or "the modes of process producing the patterns" (Eldredge and Cracraft, 1980:13-16), fits directly into what Gumilev described as the area between different adaptive streams of a single species and its natural selection. Both of these proposals for mutational processes operating at an order lower than species level, correspond to an intermediate position between (1) microevolution as "change in gene content and frequency within populations," and (2) macroevolution "as change in species composition within a monophyletic group in space and time" (Eldredge and Cracraft, 1980:13). Therefore, by moving the discussion of ethnoses into the domains of systematics while including natural selection as an ecosystemic, or landscape, component, Gumilev has made a major contribution to constructing a model of the continuing evolution of the species.

One conjecture that can be made about the relationship between such an energetic process that permeates the organic being of each member of the collectivity, and the transformation of phylogenesis to ethnogenesis, involves the combination of adaptation and mutation. If we assume that the protohominids were involved in trying to survive and successfully reproduce, and that from H. habilis onward, they both initiated, and responded to, environmental change, their internal organization as a species must have had a taxonomic structure (families, bands, etc.) corresponding to ethnoses in H. sapiens. But, what if one particular group at some relevant taxonomic level within the
species made a successful adaptation by trial and error to a particular environment and having had an effect on that environment, then underwent some form of socio-technical and natural mutation. If this change was transmittable and resulted in further affecting a reciprocal relationship with their landscape, could their behavioral stereotype, as reproduced through signal heredity, have changed sufficiently to produce either a new phylogenesis comparable to a superethnos, or an evolutionary step to the first order of a higher species.

Here we face an evolutionary argument constructed and retrospectively applied out of Gumilev's model. If, as we now know from "sympatric" archeological evidence (Tobias, 1987), there were co-local and contemporaneous hominids (A. Africanus, H. habilis, H. erectus, and H. sapien) interacting within the same environment, then even if they were not capable of sexually interbreeding, they must have had some sybiontic relationship, niche specialization and differentiation of function in adapting to their environment. This could then apply to what Gumilev discussed as "the distinctive line of evolution of Homo sapiens, in which phylogenesis is transformed to ethnogenesis," (cf. Dobzhansky, 1962; Schilcher & Tennant, 1984; and Eldredge, 1980). Turning around to look retrospectively into the process, we may now hypothesize about how ethnogenesis evolved from phylogenesis, as without some indication of the mechanics of that transformation, we have less than a reliable model to explain either the analogy or its affects on Homo sapiens. Allowing for the variabilities in behavioral stereotypes among hominid taxa, does this notion of ethnogenesis as phylogenesis provide any basis for proposing some form of hominid species transformation involving communications and transmission of relevent information. Or, for instance, would a particular group at a relevant taxonomic level developing the most relevant behavioral stereotype for adaptive communication have had a reproductive, hence selective and evolutionary advantage.
Analogous to ethnogenesis, at the level of re-speciation or phylogenetic transformation, would endogamy have had a role. We can only speculate. And yet, the same energetic mutation that Gumilev postulates as entering the biosphere and affecting human behavior certainly could have conceivably wrought a transformation in certain bands of hominids at each level, giving rise to a transformation to the next. That is, A. Africanus might have given rise to H. habilis, and so on. By implication, only certain groups within each species would have been so energized as to respond in a more behaviorally advancing stereotype, not necessarily transferable to all other members of the species, or to other co-present hominid species, but transmissible to its own offspring as signal heredity, either through genes or cultural learning.

The reason for indulging here in this hypothetical construction is to test the logic of Gumilev's argument about the analogy of phylogenesis and ethnogenesis. In conclusion, the model has some conceptual merit for both examples. If on the other hand, it could be demonstrated that it was not possible for phylogenesis to occur within the most loosely framed version of his model, then it would cast a strong doubt on the viability of the model to explain ethnogenesis. To this end, I hope to have demonstrated a reasonable argument for the possibility that the process could operate analogously at both interspecies and intraspecies levels. In this case, as all species undergo natural selection within an evolutionary framework, each will have appropriate phyla that change in an adaptive relationship to their environments, the successful ones transmitting the appropriate behavioral stereotype through signal heredity to the next generation, and expanding their territory within the larger environment through the dynamism of that mysterious energetic surge which accompanies a phylogenetic process. Assuming entropy to be equally present in any relatively closed system (a species), each particular phylum
would also, unless the process was arrested by other factors, gradually decline to a state of relative homeostatic equilibrium with its environment. Therefore, it also seems that Gumilev's argument for a phylogenetic and ethnogenic analogy is reasonable from the standpoint of applying his model of the latter to the generalized biological information that we have about any other species as part of the evolutionary process of natural selection and conforming with natural laws (or forms of motion of matter) to which all species are subjected.

This conclusion about the relevance of ethnogenesis to analogous processes effecting the broader biosphere brings the whole model more in line with Gumilev's statement that the superethnos not only "assumes all the qualities of a natural phenomenon," but also engenders "a new chain of regularities" in the process. The regularities of phylogenesis within any species, having been shown to follow a similar sequence of rise and decline to homeostasis, and would follow for H. sapiens, although each particular timing and circumstances pattern would be decided by its particular, objective material situation. As a logical aside, the same argument might be made for a species, as it too would arise, develop, then decline to a homeostatic equilibrium. Furthermore, if transformation from one species into another, as from earlier hominids to H. sapiens occurs evolutionarily, then a species cannot represent a completely closed system, but only a relatively closed one, which poses a problem for Gumilev's further argument for adopting General Systems Theory to ethnogenesis. Finally, if I understand Gumilev's argument, this comparability ties ethnos and his hypothesis into a natural history on top of which, but fully interactive with, is found the social sphere of action, structure transformations and hence, history.

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Linkages and the Systems Method

In addressing the problem raised earlier over what system of quantification is appropriate for measuring ethnics, Gumilev (1973c:468) asks, "what is it exactly that tends to cement different people, who are often unlike one another, into an ethnic whole." Regarding the social form of motion of matter, he finds that its system of numeration is "performed by productive relations, which have a capacity for spontaneous development." Ethnic regularities, on the other hand, "tend to be discontinuous," and demand a system of numeration drawn from the natural sciences. Though history can investigate the "interrelationships and sequences" between events, and provide "fine descriptions of the rise and decline of social institutions, he states that it clearly "cannot explain (either) what an ethnos is, or how its members are linked," through emotionally embodied, behavioral processes. In his view, any explanatory system of quantification dealing with the behavior of natural phenomena such as ethnics must be correspondingly drawn from the natural sciences, which alone can account for the discontinuous regularities governing ethnics. But this "system of numeration" (sic. quantification) which he takes to be a modified systems theory, must also account for the most important linkages, those that connect the ethnos with its landscape and technsphere. In his words (1973a:468), "these linkages are not accidental and depend on the character of adaptation and the level of development of productive forces." Therefore, he expects a quantifying system drawn from the natural sciences, not only to explain adaptive links, but also to explain their relations to the social forces of production that modify those adaptive characteristics of ethnics.

Gumilev has found a research methodology to answer this question of how differing people are linked within the discontinuous regularities of an
ethnic whole while at the same time maintaining links with spontaneously developing social phenomena. Demanding a "mode of thinking and system of generalization," that provide a basis for a natural science of ethnology, he turns to von Bertalanffy's (1937), "theory of open systems and states of mobile equilibrium that represent ... an extension of ordinary physical chemistry, cybernetics and thermodynamics," better known as General Systems Theory. Gumilev finds in the systems method, as Bateson would say, "the tie that binds" ethnos to its social and natural linkages; a system defined by von Bertalanffy as "a complex of elements in a state of interaction." Thus, in Gumilev's view,

the practical meaning of this abstraction is that the primary information element is not an isolated fact, but a certain aggregate of facts that assumes distinctive properties because of the existence of characteristic linkages between individual facts (1973c:469).

One might be tempted here to interpret an ethnos in terms of its being an aggregate of facts (people) linked through characteristic traditions, or recognizable similarities.

In defining the utility of general systems theory for elaborating a theory of ethnogenesis, Gumilev demands that it provide for a hierarchical organization in which the mechanisms establishing and maintaining linkages between elements interact on all levels. To establish such a "system of numeration," he turns to A. A. Malinovskiy's interpretation of systems theory, in which two sets of propositions provide a model perfectly suited to Gumilev's notion of ethnos as process: linkages and units. Here, A. A. Malinovskiy defines linkage as the first of these sets, in that

the basic aspect of a system is the presence of certain linkages that may vary in form and may bring different sets of elements into the system, provided the continuity between elements and types of linkages is always preserved (1973c:469).

Given a method whereby linkages are specified which attract new elements into a system such as an ethnos, then once the dynamics are clarified,
those elements must be defined. In the second set of phenomena proposed by Malinovskiy's definition,

A system is made up of units, whose groupings may have a significance of their own: sections, blocks, subsystems. Each unit represents a system of a lower order (1973c:469).

Provided with a model displaying a hierarchical structure corresponding easily to his taxonomy of ethnic processes, Gumilev (1973c:469) views it as "enabling us to apply the hierarchical principle and conducting our investigation at any given level." To operationalize this model, however, Gumilev must take one further definition from Malinovskiy of what constitutes a system and its distinguishing features, thus,

any system is distinguished by three aspects: (1) the peculiarities of the composition of elements, (2) their numbers and (3) their structure, i.e. the type of linkages between elements. By elements are meant the characteristics of a unit that are incapable of existing without linkage with the given unit (1973c:469).

Rather than directly applying Malinovskiy's definition to explain ethnos, and perhaps stretching General Systems Theory over too broad a field, it is better to see how Gumilev interprets its relative validity as an appropriate strategy. He begins by adopting Malinovskiy's definition and approach as "a kind of algebraic formula," in which the appropriate values can be substituted and the basis for a solution to ethnos can be obtained, and thus calls for a view of ethnos as

a distinctive system consisting of social and natural units with their inherent elements . . . not a simple collection of people who may resemble one another in various features, but a whole consisting of people with a great variety of tastes and abilities, of the products of their activities, traditions, geographical environment, ethnic surroundings and a certain innate drive as well as a tendency to expand or decline (1973a:470)

Within this view, Gumilev singles out tendency for an ethnic drive to expand or decline as "particularly important" because it bears on a further proposition of the systems model. That is, "common to all cases of sets is the property of
elements of being endowed with all the forms of activity that may lead to the formation of static and dynamic structures" (Gumilev, 1973c:445). Therefore, if an ethnic "set," even in an inert condition, contains some elements (either individual members or behavioral traits) that are either carriers of innate drive or have the capacity to receive an energetic jolt of it, then those elements could be triggered by the right circumstances to undergo a dynamic transformation to an active phase of ethnogenesis.

Striving for a holistic approach, Gumilev (1973c:470) contends that, "as all observable facts fit into a dynamic system of historical development," one need only select facts that are relevant to modeling ethnogenesis as a specific "part of world history . . . [as] quite another model would apply to the development of society as a whole." By restricting the historical field, he claims to resolve "the problem of historicism," which I assume refers to "the tendency to interpret all knowledge and all human experience in a context of historical change" (Troeltsch, 1922 in Rader, 1979:87). In selecting the facts of a particular part of world history relevant either to ethnogenesis, or to a specific ethnos, and hence integral to a holistic model inclusive of biological evolution, he hopes to achieve a dynamic synthesis. This would theoretically avoid a failure inherent in reducing ethnus to either a social or biological system of interpretation, neither of which can independently provide an adequate analysis. Here Gumilev (1973c:470) confronts a language problem peculiar to Marxist analysis, in which one could not speak of an Arab or Berber "society," or conversely, a "feudal or capitalist ethnus," rather, one could only speak of an Arab or Berber "ethnos," or a capitalist or feudal "society": the former "makes no sense because social forms tend to succeed one another independently of the life span of the ethnus."
Keeping within the framework of this thesis, we must avoid trying to answer the question of whether or not Gumilev's theoretical "algebra" solves the problem of "historicism" embedded in the social element of an integral model, or answers Popper's (1966) more ideosyncratic labeling of any holistic, organic theory of human social development as "historicist." Indeed, it is hard from my perspective to respond to a supposed theoretical necessity of separation between social and biological, as my theoretical position implicitly denies the independence of the former from its biological basis.

Two Types of Systems

Continuing to develop Gumilev's synthetic response to the problem of integrating these theoretically divided social and biological fields, we find that in general systems theory there are two distinct types reflecting a difference in the system of numeration on the social and ethnogenetic levels... [as] Malinovskiy distinguishes two types of systems: a corpuscular and a rigidly fixed system, which tend to interact through different techniques (1973c:470)

These two types of systems can be divided into the social (rigid) and biological (corpuscular). In the former, "society gives rise to types of linkages that tend to coordinate its functions," and is viewed as rigidly structured. In the latter, or corpuscular system, "the species, or ethnos, development proceeds through increased perfection of the individuals, without any constraints in time or space." The notion of "corpuscular" is drawn from the biological sciences where it refers to an order of complexity involving combination, both greater than and contrary to a repetition of units or aggregation. This idea most probably derives from Vernadskiy's construct of noosphere and has been borrowed by de Chardin (1949:20), who never cited Vernadskiy, but who gives the following definition of corpuscularity as a particular kind of complexity. According to de Chardin, this complexity involves
combination, i.e., that particular higher form of grouping whose property it is to knit together upon themselves a certain fixed number . . . of elements, with or without the secondary addition of aggregation or repetition -- within a closed whole of determined radius . . . [as] in the case of aggregation and crystallization, the arrangement remains, by its nature, incomplete. At any time a new combination of matter is possible from outside. . . .

Combination, on the contrary, produces a type of group that is structurally completed around itself at each moment . . . the corpuscle [is] a unit truly and doubly "natural" in the sense that while organically limited in its contours so far as its own existence is concerned it also, at certain higher levels of internal complexity, manifests strictly autonomous phenomena. . . . [as] complexity progressively gives rise to a certain "centricity" -- not of symmetry, but of action . . . we might call "centro-complexity" (1966:20-21).

This description of corpuscularity represents only one interpretation. But as Gumilev leaves off a definition, merely citing Malinovskiy's, we at least now have a general picture of the tendency towards complexity, flexibility, and combination, characteristics which he ascribes to a corpuscular system.

Before continuing with the "analogy between social and biological levels" postulated by Gumilev on the grounds of this definition of two types of system, we must question what is meant by (1) increased perfection, and (2) a lack of space-time constraints. The former would tend to imply that perfection involves each individual striving to behave more closely to the normative behavioral stereotype of the respective ethnos, which best suits its co-adaptation with a particular landscape, thus benefiting individual survival. This, however, raises problems of mechanism and perception, of the constitution of the behavioral stereotype and how it is diffused throughout the system, a problem avoided for now. As to a lack of time-space constraints within an ethnos, we can only assume here that this proposition modifies the conception of the individual process of development, leaving the striving for perfection of an organism seeking a dynamic equilibrium with its landscape and effective reproductive survival free in some way from socio-historical constraints.

These propositions leave room for further scrutiny, and the following chapter
returns us to historical geography, asking questions within it based on this new level of awareness of ethnos as a holistic process.

Ethnic Wholeness as a Corpuscular System

We now arrive at a crucial point in the systems model as Gumilev defines "the existence of ethnic wholeness as the dynamic state of a system of the corpuscular type." To construct an analogy between a theoretical ethnic system and a general system, he must fit the categories of the former into those of the latter. Therefore, we must follow his procedures to check the "fit." First, ethnos is redefined as "a closed system in which [by definition] the initial burst of energy, or innate drive, is gradually spent, and entropy steadily increases." Secondly, because it is a biological, hence corpuscular, system, ethnos as "a living substance or system must therefore constantly eliminate the accumulated entropy by exchanging entropy and energy with its environment." Thirdly, because it is a biologically reproduced system, "this exchange is regulated by control systems that use information passed on through heredity." In the case of ethnos, "the role of control system is performed by tradition which interacts equally with the social and with the natural forms of motion of matter." But the human species differs from other mammals in the complexity of "the transfer of experience to younger generations," due to our technosphere and processes of transmitting information, especially through language and speech, and likewise, "an ethnos represents a form of collective living peculiar to man" (1973c:470).

To review the three main points of analogy, (1) an ethnos is a closed system, therefore it must (2) exchange energy for entropy with its external environment, and (3) regulate this exchange process through intergenerational transmission of a common behavioral stereotype. But we run into problems in
In each of these three propositions concerning ethnos as a system. The first problem we encounter is in the analogy between ethnos as an actual existing phenomenon, as opposed to a heuristic device described as a closed system. A recognized authority on the subject of ecological models for human societies, J. W. Bennett (1979) states that,

since most of the thinking about systems was done initially on the basis of mechanical imagery and processes, it is a fact that as one moves from mechanical systems to organic and social-behavioral, one moves from relatively closed entities, with their own self-contained generating and stabilizing features; to open entities, which may maintain a degree of systematic integrity, but which are constantly engaged in transactions with an ambiguously demarcated environment: receiving information, modifying their operations, altering their output. Since such open systems are common in biology and Nature generally . . . however, there is at the very least, a matter of degree: in general the most open systems are human social systems, because of the nature of human behavior (1976:256).

Continuing to confront the problems raised in this contradiction between Gumilev's metaphoric use of the systems analogy, and what I believe to be his intent, of a fully operational model, and again turning to Bennett, who further states that,

to think about contemporary social systems -- or all social systems -- in terms of the criteria used to define relatively closed or stable mechanical and organic systems is to confuse systems that retire energy, increase entropy, and simplify structure with systems that generate energy, decrease in entropy, and tend to increase their structural complexity (1976:256).

A possible rebuttal that ethnogenesis is interpretable as a closed "organic" system because it is a natural, not social, system, does not solve the problem of a tenuous analogy. It would stand to reason that if ethnos were a rare example of a closed system in the organic world of nature, then it would necessarily expend its energy, exchanging it with the external environment for entropy. But, we must attempt to establish whether or not ethnic systems tend towards simplicity and decline. Is it possible that we have found a case where where an open, dynamic system increases its energy generating capacity and

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increasing in structural complexity to a certain point, then undergoes a transformation to a closed system in its declining phases? Gumilev does not seem to suggest any similar proposition, but it could be logically inferred from combining his model of an increasing taxonomic structure for each ethnos, i.e., from convivia to superethnos, with the life cycle of each component. We must at this point, however, continue to follow Gumilev's argument to see where it leads, and whether it offers a resolution to this dilemma.

Gumilev claims that the use of systems theory enables him to "review the principle of formulating conceptual models of global history." He briefly critiques Vico, Spengler and Toynbee "who sought to explain how the process works," whereas he is "in a position to answer the question, what in fact is being subjected to modification." He further argues that

the building of conceptual models, after all, lies at the basis of any historical interpretation, and that is precisely what distinguishes history as a search for truth from a chronicle or a simple listing of events (1973c:470).

Moreover, as the object of his study is a real material entity, an ethnic system at a particular level . . . [and despite the fact that] directly observable ethnoses represent only phases of the ethnogenic process . . . the phenomena that follow the initial shock . . . can, despite the wide diversity of conditions, all be interpreted within an allowable margin of error (1973c:470).

How, then, does he propose to interpret these partially observable processes through the language of systems theory, much less "offer a solution for the controversial question of the relation between man and the geographical environment." Before criticizing this proposition from its weakened basis in systems theory, let us follow Gumilev's construction of the model.

Based on the premise of "acknowledging the ethnos to be a complex, multi-level system," Gumilev claims entitlement to include within ethnos, "in addition to people, the tools used to obtain food, art objects and scientific
views, domestic animals and cultivated crops." This expanded notion of ethnos has been put forward earlier, but here he claims to be dealing with a system as a kind of anthropocenosis that was programmed by the conditions under which the initial burst of innate drive occurred, including the given form of spontaneous social development (1973c:471).

Based on this assumption, Gumilev further redefining ethnos, not as "a simple sum of individuals, but rather as a system of relationships uniting those individuals." These relationships are now discussed in terms of "linkages [that] extend not only through space but through time and are set off by a limited burst of innate drive that gives rise to the ethnic whole." Linkages, therefore, can be interpreted either as structural, hence rigid, or alternatively as communicational and fluid, thus allowing an interactional model of relevance to be introduced. This notion of relationships remains crucial to the whole proposition as it allows Gumilev to further modify ethnos. He finds that this system of relationships is similar to the factor which limits ethnos to the amount of initial energy received, in that it is limited in its development, even under optimal conditions of territorial isolation, by the phase of homeostasis or equilibrium with the environment, both natural and ethnic, i.e. with neighboring ethnoses (1973c:471).

Before taking issue with the use of homeostasis as an operational concept in this model, we must take into consideration Gumilev's statement that since homeostatic ethnoses tend to lose their resistance, any disturbance of the equilibrium is likely to result in disintegration and, therefore in the destruction of the system (1973c:471).

Gumilev uses this reference to laws of energy to support the concept of innate drive being a biological feature of ethnos, stating that "the innate drive cannot be regarded as a socio-economic phenomenon because that would be contrary to the law of conservation of energy." He does not, however, explain why this is so, merely referring back to his previous statement, that an ethnos is
in reality only its linkages, or, the relations generated by an initial innate drive within an anthropocenosis programmed by concrete limitations. But as a biological feature, according to Gumilev (1973c:471), innate drive, like all such characteristics, arises as a result of mutations and may be eliminated as a result of natural selection. . . . [and] must therefore be viewed as an exogamous factor with respect to ethnogenesis, and an endogamous factor with the respect to the biosphere.

Therefore, assuming that his use of the terms endogamy and exogamy metaphorically refers to a valence between natural phenomenon, may be eliminated from an ethnos. Still, innate drive constitutes a more powerful entity than an ethnos as it arises from outside of ethnos and involves the biocenosis of living matter in the biosphere, thus its capacity for emergence would remain within the landscape in some form.

The Role of Endogamy in Cultural Transmission

If Gumilev intended that the systems model provide a theoretical basis for integrating representations of social and natural phenomena within a common framework, then the empirical evidence against which the theory is tested and the model operationalized should also represent data from both spheres. But the easily accessible data comes from the "social reality" of "political, economic and cultural history." Gumilev (1973c:471) recognizes the problem, in that using data from the natural sciences is more difficult, as this data is "not immediately visible at the surface, but can be obtained only as a result of analysis of a large body of facts and empirical generalizations." Nonetheless, Gumilev finds that the most relevant and accessible body of empirically generalized data from the natural sciences, comes from Yu. Bromley's (1978) work on endogamy.

Finding data on endogamy relevant and accessible, Gumilev returns to that issue. Restating the point that if ethnos were simply "a social
phenomenon intermarriage with outsiders would not affect its structure," he then reverses the argument, claiming that if "intermarriage does have an affect on ethnic structure, we must conclude that . . . we are also dealing here with a biological relationship." Here, he disclaims any relationship between this finding and race, with which I agree is a necessary defence against being misunderstood or misused by ethnocentric racists. Nevertheless, he has not yet clarified why he is only dealing with the biological consequences of intermarriage, albeit proposing that,

the unity of people constituting an ethnos derives from an internal structure and behavioral stereotype. While the structure is formed during the historical process of development of the ethnos and is shaped by the social form of motion of matter, the behavioral stereotype develops as a result of adaptation to natural conditions and is passed on through the process of signal heredity, which is peculiar not only to man, but also to animals, so that behavioral phenomena must be viewed as natural forms of motion of matter (1973c:471-72).

From this statement emerges an analogy between structure and the rigid social system, and between the behavioral adaptation and a corpuscular system. On that basis I would accept the conclusion that "an ethnos embodies both a social organism and a biological population." It is, however, this latter association of biological population with ethnos that holds significance for endogamy as behavioral stereotypes are carried by this biologically reproductive population and are subjected to transmission by signal heredity, with all that entails,

**Defining Ethnos as an Energetic Field**

The conjuncture of energy and people that gives birth to an ethnos as a phenomenon of natural history also, according to Gumilev, gives rise to transformations comparable in magnitude to a small-scale geologic upheaval. [as] the rise of a new ethnic whole has always been associated with a breakaway from old stereotypes and therefore requires a tremendous expenditure of energy (1973c:472).

This energetic system of relationships thus requires more than just unique
conditions to emerge from a relatively static environment. But, if the phenomenon of ethnos is "viewed as energetic in character," then what is this energy and where does it come from. Earlier, Gumilev stated that "passionarnost," or innate drive, derives its capacity to act from the energy available in the biocenosis of a particular geographical area of the biosphere. He now refines that idea, stating that biocenotic energy

produces the psychic effect . . . innate drive, a biochemical energy that is absorbed by members of the ethnos and is spent in the course of their activity, whether creative or destructive (1973c:472).

Again resorting to Marxist philosophy, Gumilev ascribes the tendency for "the social and natural forms of motion of matter . . . to interact with each other precisely because of this innate drive." And treading a line between analogy and scientific proposition, he continues;

just as some chemical reactions occur only at high temperatures or in the presence of catalysts, bursts of innate drive, [as] the biochemical energy of living matter refracted through the psycho-nervous system of man, tend to create and preserve ethnos, which then vanishes as soon as the inner drive weakens (1973c:472).

Though more precisely formulated, this statement contains little new information except if the concept of refraction is taken as the transformational key towards understanding how "free" energy in the biosphere becomes incorporated into a few members of the human species in a particular place. But to use this significant "new" information we need to know what Gumilev means by refraction. One useful scientific definition of refraction is as follows:

Refraction: the deflecting into a convergent path, the rays or waves entering the body from a different density of matter, i.e. the inert gasses of the atmosphere within which particles act differently than when absorbed into the biomass of an individual human organism (American College Dictionary, 1961).

This definition provides a relevant concept that clarifies the preceding proposition about the role of innate drive in ethnos, and brings it closer to becoming operational. Simply stated, bioenergetics and biorhythms
exist in both latent and dynamic forms of electro-chemical energy in any environment. But even though Gumilev assumes it as a given, this principle of energetics needs further explanation. It can generally be defined as a first principle of ecology, the flow and transformation of energy that makes life possible. Here Gumilev's ideas find a correlation in Bennett's (1976:40) study of human ecological systems in terms of energetics, in which he states that if biological systems can be represented on the whole by stability and balance between organisms and Nature, human 'ecology' may best, over the historical span, be described by the reverse properties.

That is, human systems tend to overproduce, to create a higher flow of energy than is necessary for stability, or to increase the transformation process and overcome any immediate natural limits, or in Bennett's words,

*humans try to get the highest yield -- to reorganize energy, to resist entropy or the retirement of energy to simpler states, thus conferring a teleological property on human systems* (1976:97).

But to further clarify "energy," we can look at Odum's (1971) study of its role in human ecosystems. Here, Bennett's describes Odum's concept of energy in a manner that sounds like Gumilev's:

*energy, or what he [Odum] calls power, is the common denominator of both natural and social processes. Power is the rate rate of flow of useful energy, and is a measurable quantity . . .* (1976:105).

Or, in Odum's own words,

*everything and anything that takes place on earth involves a flow of potential energy from sources into dispersed heat through pathways driven by directed forces which originate from energy storages. The essence of cause, Newtonian physics, and the laws of energetics are irrefutable on these principles, but only recently have these laws that were developed for simple physical systems been applied to nature's complex ecological system or to the even more complex system of man's civilized actions in the biosphere. The flows of energy through complex food chains and complex economics systems follow the basic laws, and we may use these quantitative relationships if we realize that the flows in the macroscopic world are primarily flows of populations of molecules, cells, organisms, people, occupational groups, and other associations of active components* (Odum, 1971:40).

This digression over the meaning of energy, should be helpful in
clarifying Gumilev's model, and situating him, like Odum, within both a 19th
century style of reductionist generalization, and the contemporary discourse of
human ecology. As mentioned in the introduction, Marxist philosophy privileges
an organicist and historicist approach to a science of man, enabling researchers like Gumilev to work in a materialist framework integrating a holistic,
energetic dialectic into their research. This is also their limitation.

The Rhythm of Ethnos

The importance of energy to theories of structure and human action
cannot be underestimated. And as no human ecology can develop without demon-
strating the complex links between energy flows and human behavior, Gumilev
thus leans in the right direction. His concept of ethnos connects the natural
and social processes through a capture of energy at the level of what might be
reinterpreted as a communications model of human behavior. If indeed ethnos
exists as a set of energetic, communicative relationships linking individuals
through inherited, shared processes of recognized similarity, then this innate
drive must take some unique form in human behavior. That is, once transformed
from nature through a refraction into the psyche, its metabolical activity must
have some form in which it drives this group in their adaptive procedures. For
Gumilev, the systems input to his evolving model now allows him to

define the term ethnos, which we have only described so far [as] an
ergetic field with a particular rhythm since another ethnos would
be distinguished by another rhythm (1973c:472).

The deceptively simple definition above introduces two new concepts
and terms, field and rhythm, which, as we shall see, are as vital to the final
concept as is the previously discussed principle of energy. Regarding rhythm,
Gumilev merges the vague with the grandiose, claiming that:

It is precisely because of these rhythms that we can instinctively
distinguish 'our own kind' from that of others, even though indivi-
dual consciousness cannot explain that feeling and prefers to ignore it. Only the collective consciousness of science and its accumulated experience enable us to understand the deep-seated essence that is concealed behind the external manifestation of ethnoses. What physicists have discovered with respect to electricity and light and chemists with respect to the interaction between acids and bases must now be explained by ethnologists, if only for the sake of the monism of science (1973c:472).

Can ethnos be comparable in human behavior to particles and elements in physics and chemistry? If, in the search for an understanding of human behavior, this elemental problem of how we differentiate between "us" and the "other," both as a general principle and in situated associations with historical phenomena, can be explained partially on the basis of a natural history of ethnos as it affects human structure and agency, then the answer is yes. And, as I hope to demonstrate, the key to the whole model at this point hinges on that aspect of energy Gumilev terms "rhythm." First, Gumilev limits rhythm to a non-inherited, behavioral process. As he puts it, rhythm is not inborn. It is the property not of an individual, but of the ethnic community. A newborn infant is endowed with an inherited genotype and phenotype, but it does not possess ethnic rhythm. As the child gradually becomes part of the life of the community, his biological field begins to fluctuate in unison with fields of those around him. This is a kind of resonance (1973c:472).

Before analysing this preceding set of propositions, three points arise. First, as Gumilev previously stated, the phenotype means something distinct from signal heredity, and also from the phylogenetic to ethnogenic transformative process of innate drive, and from ethnic rhythm. Second, there must be an inherited propensity or predisposition for the transmission and attraction to a communal ethnorhythm to which an infant must learn to respond. Third, it is implicit that some relationship must exist between the predisposition, the communal "field" of ethnorhythmic resonance, and the heredity process involving signal heredity, genotypes and phenotypes. This latter point is crucial to my own interpretation of ethnos, and introduces a necessary
modification to the application of Gumilev's model in light of other theories of cultural or ethnic transmission (Cavalli-Sforza & Feldman, 1981; Collinvaux, 1980, 1984; Sheldrake, 1980) which will be looked at later, in terms of filling in the "gray box" in Gumilev's model of the transmission mechanism.

Gumilev recognizes the crucial impact of rhythm and resonance on his model, and on actual ethno-processes if the model is to fit some empirical data, stating that

it is therefore quite clear that the key factor in ethnic affiliation is the kind of upbringing an individual had in the early stages of his life rather than any racial characteristics. The genotype may account for a great deal: temperament, reaction speed, an ability to think in abstract terms, imagination, etc., but it will not produce a sense of affinity for "one's own kind," which is the distinctive characteristic of an ethnus. This particular characteristic is passed on to the child through 'signal heredity,' i.e. through tradition, and ethnic communities, unlike races, may therefore incorporate outsiders. It is precisely this ability of man to find resonance in an alien field that explains the adaptation of those who find themselves in an alien ethnic environment (1973c:472).

This argument seems clear enough, except that the mechanism of signal heredity as tradition still seems too loose a concept of process, subject to large variances on one hand, and uncomfortably vague on the other hand. What is the difference between stating that "one passes characteristics on to offspring through tradition," and any comparable folk saying that attributes ethnus, or being part of "a people" to its early cultural learning, e.g., the saying attributed to Montesquieu, that "one sucks ethnus from one's father's breast."

If we are to understand ethnus scientifically, as a phenomenon of nature having measurable energetic properties, then its qualities and mechanics of biosocial transmission must accordingly be more grounded in some material phenomena, or measurable processes. It is possible, however, that we may find a necessary physical existence to this rhythmic and resonant collective ethnic process in the aspect of its "field" as proposed by Gumilev.
Ethnic Fields: Metaphor or Materiality

Taking a close look at Gumilev's notion of "field," and what he means by it, would entail assessing its potential without falling into the trap of trying to develop any general, or unified "field" theory. Kurt Lewin (1949), for example, attempted to develop a theory of social physics around the notion of a unified social field which, as an explanatory model, proved to be as inversely limited as it was attractive in the short run. Likewise, any number of other proposals have surfaced over the years, for a social field theory to link cultural and social phenomena to the natural and physical worlds. Nevertheless, as Gumilev (1973c:472) concludes from his discussion of ethnorhythm, the ethnic field does not lie within the bodies of individuals, but between them, so that, in investigating peoples from the ethnologic point of view, we are not concerned with the external phenomena, but with their internal essence through space and time. All the details of everyday life, customs, religion, etc., described by ethnographers, are, from the ethnologist's point of view, only external manifestations of a basic cause.

This statement presents a problem. If ethnorhythms are not embodied in the totality of an ethnic population and not co-resident within the individuals as organisms, but ethereally/existing in space and time, what substance do they have, even as energetic phenomena, especially in relation to the biocenosis linking human energy to the biosphere. Gumilev takes a convoluted route to the answer, stating, "The principles of field and system not only are not contradictory, but in fact complement each other." Before explaining this complementarity, however, he calls for an understanding that the initial burst of innate drive creates a biological population of individuals who are endowed with a great deal of energy and tend to be attracted to one another. . . [and] the field . . . provides the basis for their unity and continued solidarity, usually without their being aware of it (1973c:472).

At this point, I assume that he is talking in the taxonomy of ethnos, about a
consortium. And thus, even at that primary level, "when entering into contact with the environment, [the consortium] organizes itself into a system of the corpuscular type to present a force against the environment." Again, Guilev gives no description of how the relationship develops between this group's organizational process and the energy necessary to its existence.

Gumilev has now proposed that the primary ethnic affiliation occurs at the relatively unstable level of consortia and creates a corpuscular system of relatively microscopic units. That is, while each individual organism within the consortium remains separate, or corpuscular, in relation to any other organism, their resonance within a field creates a linkage, and thus a system. Therefore, we must first distinguish the corpuscular elements of any ethnosystem which, according to Gumilev, are linked by an external energy that does not permeate or penetrate the body, except as it is "refracted" by the psyche, presumably through its subconscious perception. In other words, it is "received." Second, the consortium must survive external adversity and a tendency for external forces to fragment it by stronger attractions, or possibly by "noise" in the communications. These two processes may be clarified by drawing an analogy with work by Sperber and Wilson (1984). In this case, the situation might be seen as establishing a complementary "relevance" between members developing their own "ostensive" or display style, as they struggle against influences (noise) from other relationships where existing or potential conditions of relevance compete for their attention. Having survived the initial challenges to organization into a relevant corpuscular system, Gumilev proposes that the next step for the consortium will be the formation of a social group, i.e., the creation of a rigid system with a division of functions among its members, which enters upon a historical process of development programmed by the local peculiarities of the geographical and ethnic environment (1973c:437).
While concluding that this transitional point in an ethnogenesis establishes the fundamental linkage between the natural and social systems in a complementary manner, whereby one supports the other, Gumilev (1973c:437) warns that operating with a single model of ethnogenesis, . . . each particular case . . . produces a unique set of collisions . . . [Therefore, according to] our thesis . . . an ethnos as a system represents a natural phenomenon that merely correlates with social regularities.

Before we follow this assertion into the fray between Gumilev and Kozlov over the definition of an ethnic community, a number of points still stand unresolved. But my own scepticism over the lack of a corporeal situation of this energy still stands, and will be dealt with subsequently. It is sufficient at this point, however, to mention four areas where Gumilev rejects Kozlov's premises. First, he disproves Kozlov's principle that ethnos is based primarily on an external similarity of a "community of language, culture, and daily life." Second, he contrasts Kozlov's socio-demographic method, in which "the unit of enumeration . . . is a person," with the ethnological-systems approach, in which the enumeration "unit would be the characteristics of a particular relationship, and the object would be a system of relationship."

Third, he claims that the aim of the demographer is to identify similar people so they can be grouped in a particular category to be enumerated, [whereas] the aim of the ethnographer is to establish dynamic relationships between different people, [moreover] the simplest system -- that of a family -- consists of man and wife and is based on their dissimilarity. A more complex system, such as an ethnos or superethnos, is also based on the dissimilarity of its members, but rests on the stability of the character and direction of a system of changing relationships that are amenable to the building of a model. In that sense, [a criticism of his historicism], ethnogenesis is a historical process, just as any kind of evolution assumes historical aspects (1973c:474).

Fourth, in responding to charges of biologism, he refutes Kozlov's view that racial interbreeding results in hybrids of a stable type, stating that race "has no bearing on ethnogenesis" when,
according to the Mendelian laws, a genotype tends to break down in the third and later generations. [While], on the other hand, ethnic mixing through the mechanism of exogamy does give rise to significant results by introducing a new behavioral stereotype of behavior and endogamy has the effect of stabilizing the ethnos (1973c:475).

A further discussion of the Gumilev-Kozlov controversy will be resumed later, and thus returning to the problem of where these ethnorhythms reside, I find in Gumilev's propositions a kind of Gestalt interactionist synchronicity. That is, the neonate's propensity to respond to a total environmental situation includes the process of mimicry and corporeal learning, especially the "patterning" that occurs in an infant through the first six months, (van Merloo, 1969; Hinde, 1979; etc.). And although particularly strong in infancy, the human organism has the ability throughout life to pick up new rhythmic patterns and synchronize with them, a trait universal to all human beings, therefore inherited genotypically. But, would not any species have an inherited set of traits enabling it to synchronize with its own species, particularly with members of its own "field" (flock, pack, herd, etc.), and, at least among mammals, the propensity to recognize its own "family." Of course, the propensity to recognize close kin does not either completely support a sociobiological hypothesis of genetic altruism, nor prevent canibalism among some species.

Following Gumilev's argument, it seems entirely possible that signal heredity is at the base of a biologically encoded, social learning mechanism, and thus "ethnos" represents a communications group with related Gestalt experiences that provide a subconscious relevance for behavioral displays. Hence, individuals sharing a relatively common, subconsciously learned, set of traditions, or stereotype of behavioral characteristics, will also share a mutual recognition, or resonance. Thus, an encounter with another individual sharing the same behavioral set would trigger a resonance which would generate an
interactional, or experiential field. Numerous researchers, however, point to a deeper relationship among interactional rhythms as a field experience. Triggered through synchronicity with biorhythms, the sources for these relations range from large scale, long-term solar and magnetic waves, to individually inherited rhythmic patterns and interaction rhythms (cf., Hall, 1984; Davis, et al., 1979). Soviet research on cosmic radiation and electro-magnetic responses in organisms, however, lead to a physiological explanation both avoided by Gumilev and Western academic research, and thus by this essay.

As one can readily envisage, innumerable lines of hypothetical and theoretical inquiry and propositions can emanate from Gumilev's model of ethno-rhythms at this, nearly completed, stage of its development. But in attempting an assessment rather than interpretation of his position, I will adhere to his statements so as to "capture," as best possible, the full system before modifying it. Therefore, taking up his example of difference within the units of a system, he proposes the nuclear family as the smallest system. Here one can see a correspondence with Marx's approach to the role of family in the dual productive relations of nature and society, as expressed by the following statement by Engels on "the two-fold character of the productive process":

The social organization under which the people of a particular historical epoch and a particular country live is determined by both kinds of production: by the stage of development of labor on one hand and of the family on the other. The lower the development of labor and the more limited the amount of its products, and consequently, the more limited also the wealth of the society, the more the social order is found to be dominated by bonds of kinship (Rader, 1979:133).

While contemporary research might dispute Engels' proposition regarding stages of development and kinship, the role of the family in both social production and natural reproduction undoubtedly has a primary place in the discursive frame within which Gumilev operates. Reviewing Gumilev's taxonomy, the family must be added as a system below the consortium and above the
individual, as is clear from his inclusion of it in relation to other levels of the whole ethnic system. Also implicit is the role of family in reproduction and transmission of the behavioral stereotype, not so much from a purely sexual point role, but in setting a field for neonate patterning and establishing the primary ethnic rhythm of their offspring. This role would also explain Gumi- lev's insistence on the problem created for ethnos by exogamy, in that, primary transmission of tradition implicitly occurs within the family. It is at this crucial level of an ethnic system where possession of a strong, homogenous behavioral stereotype within the family ensures its transmission as such. And yet, would not the very heterogenous nature of the modern urban environment reciprocally reinforce a complementary exogamous heterogeneity when coupled with the mixed nuclear family. While certainly a side issue to pursue, Gumi- lev's proposition regarding endogamy as stabilizing ethnos seems consistent with his overall model and most probably with a generalized level of empirical data broadly taken from enduring, but geographically varying cases.

Two points remain to be dealt with here: (1) that behavior rather than belief motivates religious affiliation; and (2) that a biological regularity results in ethnogenetic clustering and historical sequences. First, in contending with an example given by Kozlov, where language communities were fragmented by religious strife during the 16th century, Gumilev not only provides historical counter evidence, but argues that these conflicts were not class struggles, since nobles, peasants and bourgeoise could be found on both sides. But the Catholics and the Huguenots did differ in their behavioral stereotype, which . . . is the basic principle of ethnic distinctiveness for which sufficient grounds can be found (1973c:476).

He also finds implausible Kozlov's contention that illiterate Gascon barons, half-wild Cevennes mountaineers, daring corsairs of La Rochelle or tradesmen of the faubourgs of Paris and Angers could possibly have been familiar with the subtleties of prede-
Calvinist theological doctrine -- or pre-existence -- Catholic belief that the soul exists before its union with the body. If they indeed were willing to give their lives either for the sake of the Mass or for the authority of the Scriptures, these ends must have been symbols of their self-affirmation and confrontation, and thus indicators of deep-seated conflicts (1976c:476).

The latter point is important not only to Gumilev's model of ethnose, but to my contention, that a religious community, e.g., the Muslim world, represents a behavioral, rather than a cognitive-based, system. For example, concepts of struggle and migration (jihad and hijra) may be interpreted in the same light, as Gumilev's "symbols of self-affirmation and confrontation, and indicators of deep-seated conflicts," based on "differing behavioral stereotypes." These "differences that make a difference," will be pursued later.

In concluding my treatment of Gumilev's thesis on "ethnic wholeness," the second point involves the justification for his "own efforts of seeking a constructive resolution of ethnological problems." If the complex history of human events demands an analysis of "individual collisions between man and landscape," and points to ethnogenesis as a causative factor, then

the rise of new ethnoses, which . . . tend to cluster into superethnoses . . . and the criteria of ethnic affiliation and the various consequences of ethnic interbreeding . . . [demand] . . . answers . . . not only in the history of nations, but also in the regularities of the biosphere, because that is where man always has belonged, and always will belong (1973c:476).

In justifying his earlier work on landscape and ethnose, he refers to Vernadskiy's materialist "noosphere," rather than more metaphysical interpretations of it. But before discussing "ethnology and historical geography," Gumilev (1973c:476) concludes that the basic principles of ethnose are natural processes that complement historical and biological regularities, and

the biosphere, in turn, is associated with the physical and chemical processes of our planet, while the energy of living matter, as refracted through the human organism as a peculiar innate drive, shapes those uncontrollable processes that we have called ethnogenesis.
While no one would contest Gumilev's appropriation of Vernadskiy's premise that physical and chemical processes, inclusive of energy and matter, constitute the biosphere, the mechanism of energy's refraction through the organism still remains unclear. Similarly, I have no problem with viewing ethnos as a natural process. The relation between this form of energy and other measurable energy flows has not been specified, thus one might conclude that Gumilev was speculating on the existence of a force identified by Vernadskiy in other natural phenomena, but not as yet measurable in humans. Then too, the process of refraction through the body's electro-chemical nervous system seems likely, but, likewise, as yet unmeasurable. Some of these problems are further addressed by Gumilev as he attempts to weave a tighter text in the following article. The next chapter will take this problem to the level of superethnos, in the second to the last article of the "Landscape and Ethnos" series.

In the following
CHAPTER XV

ON ETHNOLOGY AND HISTORICAL GEOGRAPHY

Continuing to develop an ethnological perspective towards his ethnographic theories, Gumilev cycles back to the historical-geographical roots from which this process of ethnogenic model building evolved. He opens this section of the treatise with the premise that all history is geographically based, as

In all historical processes, from the microcosm -- the life of a single individual; to the macrocosm -- the evolution of mankind as a whole, natural and social forms of motion tend to coexist and interact in ways that are sometimes so intricate that it is difficult to identify the character of the relationship (1973d:591).

Having earlier identified geography as the discipline that most supports research into this interaction, he focused on ethnos as the primary nexus for relationships. The difficulty, however, in identifying the "character of the relationship" is

particularly true of the mesocosm, which encompasses the phenomenon of the evolving ethnos . . . but this does not mean that the phenomenon of ethnos is the product of an accidental combination of biogeographic and social factors (1973c:591).

Despite the difficulty of identifying the exact phenomenon of the combinatory events and transformational process of ethnos, he maintains that it "is founded on an elemental model." Each of three attempts to build this model, he claims, "yielded identical results" from a different perspective: (1) the socio-political analysis of ethnogenesis; (2) the impact of ethnos on landscape; and (3)
the methods of counting time. The first analysis of ethnogenesis through its socio-political manifestations, enabled him to distinguish its "phases of historical development . . . decline . . . [and] relic vegetation." The second and third approaches also yielded corroborative evidence for this life-cycle model, which he now feels "to be correct as a first approximation." He finds that this model is useful for further research, and yields itself to a graphic expression that does not assume

the shape of a sinusoid or a cycloid; but of an irregular curve marked by a steep rise in the initial phases up to a sharp bend, followed by a long decline that becomes increasingly smooth up to a natural extinction of the process or a violent breakoff (1973d:591).

Based on the preceding description, I have drawn this curve in the following figure (11), approximating the hypothetical progression of the Muslim world system as what Gumilev terms a superethnos, according to that model. But, to fulfill criteria for empirically generalizing the historical data of the Muslim superethnos, the model demand further modification, an objective that again falls outside the bounds of this thesis.

Figure 9: The Ethnogenic Curve

Source: Gumilev (1973d)
A Dialectic Model of Bio-Historical Processes

To define ethnos from a geographical, or natural, point of view, Gumilev (1973d:591) develops two important aspects of its character. First, ethnos at the time of creation is a population, i.e., a group of similar individuals that have adapted a certain landscape region to their needs and, at the same time, have adapted themselves to it.

Second, more than a simple ethnogenic ethnogenic burst,
the maintenance of this ethno-landscape equilibrium requires that the descendants perform the same activities as their ancestors, at least in relation to the environment. On the historical level this is called "tradition." It can be viewed from both the social and biological standpoint since M. Ye. Lobashev (1961) found the same phenomenon among animals and called it "signal heredity" (1973d:591).

Institutionalization of Ethnos

Having been "born" in a brief flurry of activity, the actual "moment" being impossible to identify, this "group that has come into the world" most probably a convivial at this point, "must now become a system." This first step involves "a division of functions among members," a necessary diversification so as to stabilize the emergent group and more effectively take advantage of the landscape in terms of adaptation. Second, in order to preserve itself from destruction by competition from neighbors,

it must quickly elaborate a set of social institutions, whose character in each particular case would be programmed by the circumstances of PLACE -- geographical and ethnographical cause and effect -- and TIME -- the stage of evolution of mankind, i.e. a particular mode of production (1973d:592).

Here, Gumilev introduces a hitherto unstated, but crucial, principle:

It is precisely the need for self-affirmation that produces rapid growth of the system, but the strength for its further development is derived from the ethnic drive of the population as such (1973c:592).

The premise that an ethnos displays "self-affirmation" in its manifestation assumes that both the need for self-affirmation and strength for
further development are natural phenomena, refracted through the senses into the psyche/central nervous system. This assumption is implicit in Gumilev's statement that, "this is what distinguishes ethnos from a set of social relationships, which are determined entirely by the existing mode of production."

We thus find a twofold character of ethnos: growth and development. As a characteristic, growth involves a need among its members to affirm, or claim, identity within some entity as the communications and adaptive field within which they interact. This entity would thus attract new members to some particular norms or semiotic system with a unique, relevant display behavior. But is this need a conscious as well as a subconscious, natural phenomenon, and by growth, does Gumilev mean in numbers of members, in expanded territory, or in maturity. As the latter is excluded by its co-attribute of development, I would thus assume that growth involves both numerical and spatial components.

The second phase of ethnogenesis, as stated, requires a rapid expansion of members through reproduction, hence we can assume reproduction as part of growth. In addition, it follows from Gumilev's hypothesis substituting ethnogenesis for phylogenesis, that the need of this energy to expand grows out of Vernadskiy's statement (1945:2), that "the biogeochemical energy may be expressed in the velocity with which the biosphere could be colonized by a given species." That is, the reproductive energy of any species demands its territorial expansion in some ratio to increasing numbers and corresponding demands for drawing nourishment (energy) from the environment. Therefore, we can conclude that the rapid growth produced by a need for self-affirmation is a biological phenomenon, and although not demonstrably clear at this point, inextricably linked to the attribute of strength produced by innate drive and giving rise to an ethnos' development. But what does Gumilev mean by development. Based on implicit statements within his overall work, I assume that he
means a development of the behavioral stereotype which involves an increasing complexity and strength of its drive in affecting each individual member's behavior and degree of resonance with co-members as distinct from non-members. Accordingly, Gumilev (1973c:592) finds that taken separately, the growth of the system creates an inertia of development that slowly fades in face of resistance from the environment, accounting for the longer descending limb of the curve [cf. fig. 9].

The second factor, innate ethnic drive (passionarnost) also declines more or less along the same curve, as Gumilev (1973c:592) states "even after [it] declines below an optimal level," the rigid structure generated in the process, or "social institutions continue to exist, occasionally surviving the ethnos that created them." He gives as an example the continuation of Roman Law into European, and even modern the Turkish, state systems long after the Roman and Byzantine ethnoses "have become no more than a memory." Gumilev has thus proposed a phenomenon that occurs at a particular place. And, according to how the intensity of the energetic impact on socio-technical organization and political institutions (hence, economic life), was distributed, it would have a varying affect on different elements of the population inhabiting a particular ecosystem. Therefore, when ethnogenesis "hits" a population with relatively effective or superior military technology and organization, in relation to their neighbors, the impact of their ethnogenic expansion on the larger environment, including human populations or less dynamic ethnoses, will be greater than if ethnogenesis were to strike a less socio-technically endowed population. Again, the location of that place is important in terms of its strategic relation to both ecological resources and socio-economic factors, such as trade routes, navigable rivers, sea routes, etc., as a more complex and benefically endowed environment would produce both a greater challenge and a better opportunity field for the population undergoing ethnogenesis. From this
argument we can conclude that this energetic impulse does not strike a void, or tabula rasa, but an already operational landscape and its populations involved to some degree in the larger social world of human interaction, political structures and technosphere, with consequent relevance and reciprocal dynamics.

Intensity and its Measurement

In graphically depicting the life-span of an ethnos, Gumilev (1973c) introduced a curve along an x-y axis in which the abcissa, or horizontal, axis corresponds to time, and the ordinate, or vertical, axis with the magnitude of inherent ethnic drive. But what is plotted here offers very little to be measured, as the "form of energy that tends to stimulate the process of ethnogenesis" is not stable and may generate either constructive or destructive effects. In fact, "a maximum of drive, just like a minimum, dies not necessarily foster a flourishing condition of life and culture," and as Gumilev (1973c:592) continues, in the case of maximum energy, this particular phase of ethnogenesis may wipe out the fledgling ethnos in its own dynamic activity. According to Gumilev's implicit reasoning, and in the examples he gives, this activity always involves conflict, in that "ethnic overheating leads to brutal blood-letting both within the system (ethnic or superethnic) and on its boundaries, in the regions of ethnic contacts." Contrary to an ethnic state of high energy with its incumbent chaos, a minimum of energy and corresponding order is equally destructive, but in a passive manner as,

total inertness and sluggishness of the population of a country, where the level of ethnic drive approaches zero, tend to deprive it of a capacity to resist its environment, both ethnic and natural, and always constitutes the shortest road to extinction (1973d:592).

From these propositions Gumilev concludes that ethnic drive, although as yet epiphenomenal in its unmeasurability, "is present in all ethnogenic processes," thus enabling him "to make ethnologic comparisons on a global scale."
Gumilev also takes into account the problem of measuring ethnic drive, recognizing that he has still not found a measure of [its] magnitude [but] can speak only of a tendency for [it] to increase or to decline, to a lesser or greater degree (1973d:592).

Admitting that no researcher can presently know by how much this drive fluctuates, he proposes that since "we are concerned with processes rather than static magnitudes," the phenomenon of ethnogenesis can be described "with sufficient accuracy, subject to later correlation," to meet the needs of the present research objectives. Though this is a weakness in the model, Gumilev rationalizes it with reference to other sciences in which the description of a phenomenon precedes its measurement and interpretation; even electricity was first discovered as an empirical generalization of a variety of phenomena that seemed superficially unrelated. When it comes to an analysis of ethnic drive, we are at Ben Franklin's level; Coulomb and Ampere came later to measure electric charge and current (193d:592).

While I do not pretend to be a Coulomb or Ampere to Gumilev's Franklin, I do accept his premise that some form of energetic phenomenon exists in the biosphere and in the energetic transformations of living matter as stated from Vernadskiy to Odum, but exactly what and how remain to be verified. It is however, also possible to deduce premises of natural processual phenomena based on the principle of empirical generalization. As set forth by 19th century science, these principles are not yet entirely superseded by contemporary fragmentation and measurement of isolated, controlled micro-phenomenon, or as Vernadskiy (1945:6) puts it "the 20th century is the century of scientific atomism." If we are indeed involved in an "evolution of living matter that is proceeding in a definite direction," a viewpoint which Vernadskiy states is derived from empirical generalizations of J. D. Dana (1813-1895) and J. Le Conte (1823-1901), then the continuing value of such postulates remains. While
these scientists proposed, respectively, that this empirical generalization took the form of "encephalization" and "psychozoic eras," one could hardly dispute the value of Dana's premise (Vernadskiy, 1945:7) that "the brain, which has once achieved a certain level in the process of evolution, is not subject to retrogression, but only can progress further." Corresponding to empirical generalizations is Goethe's premise (cited by Vernadskiy, 1945) that "in science we can only know how something occurred, but we cannot know why it occurred." But, in following Vernadskiy's empirically generalized propositions, we can possibly find a basis for Gumilev's ethnogenic innatate drive.

First, concerning the transformation from phylogenesis to ethnogenesis, Vernadskiy (1945:2) states that if

new living bodies are born only from pre-existing ones, [then] from time to time new generations arise differing from the preceding ones, [as] the rise of the central nervous system has increased the geologic role of living matter . . . since the end of the Pliocene.

Second, regarding the unique energetic basis of innate ethnic drive,

there is a continual stream of atoms passing to and from living organisms from and into the biosphere. Within the organisms a vast and changing number of molecules are produced by processes not otherwise known in the biosphere (1945:2).

Third, if "the processes in living matter tend to increase the free energy of the biosphere," then the available free energy which ethnogenesis can draw upon increases in direct proportion to the development of the biosphere. Fluctuations in this process might, as Gumilev has suggested, account for locational movement of these "initial, spontaneous, ethnogenic bursts of energy."

In correlating these propositions, and while admitting that their "precise cause" is still unknown, Gumilev suggests that the circumstances of initial energetic bursts involve:

the presence of two or more landscapes and two or more ethnic substrates, are easily explicable in terms of the energetic character of
ethnogenesis, that is, the need for the existence of a difference of potentials within the system for its further leveling (1973d:592).

Here, the transfer of energy from one system to another is a crucial element within Gumilev's proposition, although in need of further clarification. In this regard, he draws on empirical evidence (1973d:593) to make a generalization that the process of energy transfer

is most evident at the level of a superethnos because smaller magnitudes are affected to a greater extent by exogenous factors, and this tends to reduce the accuracy of construction of the model.

He also describes the shape of the curve obtained from plotting energy magnitudes against developmental stages of an ethnos, as resembling "neither the exponential line of progress of productive forces nor the recurring cycloid of biological evolution." Instead, what he proposes (1973d:593) is

an inertial curve produced from time to time by by "bursts" representing mutations, or rather micromutations, that affect the stereotype of behavior of an ethnos, but have no impact on the phenotype.

Here, he suggests a correspondence to Vernadskiy's premise that encephalic evolution has increased the geologic role of living matter including its mutagenic capacity. But if, "as a general rule, a mutation almost never affects the entire population of a particular habitat," then even if only a relatively few individuals "undergo mutation... this may be sufficient to give rise to a new breed." And as mutations most likely occur at the level of the consortium, it "would, under favorable circumstances grow into a new ethnos."

Gumilev has now set out the biological mechanism for ethnogenesis, in which the possession of a particular innate ethnic drive by "members of a consortium is an essential condition for a transformation... but is no substitute for, and does not exclude, the social aspect" (1973d:293). Questions continue to arise: how do these ethnogenic bursts affect the entire biosphere, or at least the specific region where they occur, how are other
species affected. Or, given energetic composition and transformation of molecules, particles and waves changes, is it only through H. sapiens that the mutations occur. Assuming from Gumilev's earlier reference to mutation as a phenomenon within the noosphere, and continued lack of reference to any other species, but only to climatic shifts, that he restricts this process to H. sapien. This is not implausible, given the premise of a directional evolution that involves increasing levels of energetic transfer through the agency of an evolving central nervous system. In Vernadskiy's words, "man tends to increase the size of the biosphere . . . [and] ceaselessly evolves in innumerable generations." Also possessing a unique form of cephalic ability, "mankind becomes a large scale geological force," raising a further problem, for if "thought is not a form of energy, how then can it change material processes."

Vernadskiy offers several clues in answer to the preceding question, and to the origins of the ethnogenic energies. First, "the biosphere is distinguished as the domain of life, but also, and more fundamentally, as the region where changes due to incoming radiation can occur." Second, as to whether thought is a form of energy, he refers to the previously quoted statement of Goethe, which can be equally treated under Heisenberg's principle of indeterminacy, or Gauss' law in mathematics. He also points to the production of new compounds and minerals, as well as their impacts on the composition of air and water and other biotic species, as material products of non-energetic, human cephalic and psychic processes, or "thought." Vernadskiy thus states, chemically, the face of our planet, the biosphere, is being changed by man, consciously, and even more so, unconsciously. The aerial envelope of the land as well as all its natural waters are changed both physically and chemically by man . . . the seas and parts of the oceans closest to shore become changed more and more markedly. Man now must take more and more measures to preserve for future generations the wealth of the seas which so far belonged to nobody. Besides this, new species and races of animals and plants are being
created by man . . . [who] is striving to emerge beyond the bounda-
ries of his planet into cosmic space . . . (1945:9).

From Vernadskiy's generalizations about empirically known facts, we
can deduce that mankind's potential for unique energetic processes, and contin-
uning evolution in an ethnogenic analog to phylogenesis, exists and is a pro-
cess of nature in which social factors play a role. Significantly, Vernadskiy
warned of the environmental consequences of human action some years before
proceedings from the seminal conference on "Man's Role in Changing The Face of
the Earth" were published, or "environmentalists" spoke out on the state of
man's habitat. Moreover, Vernadskiy indicated two important concepts that have
previously been inadequately stressed:

(1) the preponderance of optically active compounds as the most
characteristic general property of living matter and its products;
and (2) the function of living organisms in the energetics of the
biosphere (1945:2).

Vernadskiy's point on optically active compounds lies outside of this
present discussion, except for the importance of optical scanning and proces-
sing in human communications, and especially in regard to processes of entrain-
ment and synchronization which are characteristics of any proposed model of
ethnorhythms. His point regarding the function of living organisms in relation
to the energetics of the biosphere, is both critical to, and directly underlies
Gumilev's work on the natural basis for ethnogenesis. This fact places Gumilev
in the scientific line of Vernadskiy, and also within the same general frame of
reference as current trends in ecological anthropology. Here, I refer to the
work of Odum (1976) and the relationship between energy and behavior through
measurement of movement (Hall, 1984; Davis, et. al., 1983). Gumilev bases his
premise that ethnogenesis is a natural phenomenon on an "application of the law
of conservation of energy," which implies, that the social forms of human
action and structure grow organically within the natural process of evolution,
as discovered by Vernadsky. Therefore, having reached a certain stage of historic development, a particular ethnogenetic attraction at a specific location forms a convixium. As Gumilev (1973:593) states, these "populations are] seized by a burst of ethnic drive create social institutions, as a results of which they become ethnoses, i.e. groups distinct from all others."
The problem of applying theories from current research in energetics to this construct of ethnogenesis seemingly lies in Gumilev's lack of access to findings in those very fields of ecology in which his proposals best fit.

In speaking of ecological anthropology, I am not referring to that research focus currently titled "ethnoecology," or "ethnosystematics." Despite its appropriate sounding title, and seemingly apt label for Gumilev's method, this subdiscipline goes into the very trap outlined by Gumilev in his first discussion on historical geography. In fact, the attempt by ethnoecologists to penetrate the thinking of the people under study and perceive their world view, would come under the rubric of "geosophy" as proposed by J. K. Wright, among others. What is enriching about this new dimension to cultural anthropology, which according to Fowler (1977:216; as cited in Hardesty, 1977) was developed by Conklin (1954, 1967) and Frake (1962), is that,

According to William Sturtevant (1964:99), one of the principal reviewers of the goals of ethnosci ence, the prefix "ethno" takes on a new meaning in this context. Whereas the earlier and more typical meaning of the from in such compounds as "ethnohistory," "ethnobotany," and "ethnogeography" was the general study of the history, botany, or geography of an "ethnic group," in this context it refers to any such study done from that group's own point of view.

Given the focus on linguistic elements, or cognitive processes of a particular ethnos, the definition of what is an ethnos revolves around its self identification and use of speech acts both unique to itself and constructive of its own identity. Despite the use of "emic" and "etic" categories by scholars like Dell Hymes and other capable linguists, language based paradigms in general, have
moved even further away from a scientific ecology or systematic approach to ethnos as a natural phenomenon. These researchers have fallen into that very trap of placing too much emphasis on cognition as the basis of ethnos. While their use of taxonomies and systematics in an "ethnographic semantics" parallel some methodological aspects of Gumilev's model building, the differences are in the completely different epistemologies. First, in ethnoscience there is no proven isomorphism between "linguistic elements (native terminologies) and cognitive processes," (cf. Sapir-Worf hypothesis). Fowler (1977:240), however, finds that, "when coupled with behavioral observations," the benefits of its data, "indeed contribute to our understanding of the complex relationship between language, thought and perception." Fowler (1977:241) also finds the most telling criticism of this field comes from Marvin Harris (1968), who "fears that the implied stress on informants verbal statements will lead to idealistic as opposed to realistic descriptions of cultural phenomena, ones of little direct importance to actual human behavior." Nevertheless, The correction necessary to view this ethnoscience as a potentially valuable tool within the Gumilev ethnological toolbox, and no more, comes from Frake's (1962:58) statement (as cited by Fowler, 1977:241) that these methodological suggestions are not . . . intended to replace the analysis of an ecosystem that Western biological science can provide. A scientific knowledge of the climate, soils, plants, and animals of a culture's environment is an essential foundation for ecological ethnography -- but it does not, in itself, constitute ethnography.

I would take the preceding statement one step further and propose that a truly "ecological ethnology" would be inclusive of all that most practitioners consider ethnography including the cognitive semantic elements along with texts and other semiotic or symbolically analysable data. In conjunction with the methods and data of ecology as listed, this combination would be properly packaged under what Gumilev might agree is a form of geography,
cultural in my context, or physical in his. Similarly, the specifically proposed subdiscipline of ethnogeography would most certainly go beyond the purely Kantian spatial considerations assigned to geography by the previously cited "ethnoscientists." While not necessarily staking out a claim, I feel that for an "ethnoscience" to develop it would necessarily conform to the synthesis of natural history and communications theory inherent to Gumilev's method.

As to energetic and ecological principles inherent in Gumilev's model, if ethnorhythms are energetic communications epiphenomenon perceived and communicated through refractions of the dynamic energenetic phenomenon, then they are distinct from genotypic or phenotypic traits. Any particular ethnos may carry shared genotypic or phenotypic traits with other ethnoses, yet differ in the unique rhythms of their behavioral stereotype. Gumilev (1973c:593) also states, however, that "two ethnoses may coexist in a particular region, but two populations would quickly merge into one." Hence, it is only this energetic integument as a communications based, semi-permeable membrane that divides ethnoses and inhibits merger. When a merger does occur, it is then between a more dynamic ethnic unit and a less energetic one, the former tending invariably to absorb the latter.

One case raised by Gumilev, and which has not as yet been sufficiently discussed, involves the absorption of an existing ethnos into the field of a unit at a higher taxonomic level. That is, a superethnos may absorb an extant ethnos, not dismembering it, but bringing it under its control. The larger unit could then begin to transfer the resonance of elements from its particular, broader range of behavioral stereotype and communicational "super" ethnorhythm, to the newly absorbed ethnic unit. The lower order unit would, however, maintain a degree of its own prior behavioral stereotype and ethnorhythm, but still absorb elements from the larger, dominant unit. It might
even transmit some of its transformed ethnorhythmic elements to the superethnos and other collateral or distinct units within it, and enter into a form of symbiosis with its encompassing superethnos. This potential must always remain within the proposition, as no specific mechanism of superethnos relations with sub-units has so far been proposed.

Gumilev now moves on to construct a large-scale historical model of locational phenomena which indicate that certain spatial patterns of ethnogenesis emerge in the distribution of superethnoses. In the line of argument that follows, I find a circular correlation to his earlier propositions about heterochronism in climate. That is, he projects differences in energetic potential and distribution at a certain period in history as a systems model. In this model, the disorder of dynamic ethnic energy is evident in wars and migrations, while the order implicit in a static, declining ethnic region is evident in a lack of large-scale cohesive social strength and organizational structure.

**Territoriality and Superethnic Formation**

Based on his ethnological analysis of a broad range of historical data, spanning several millenia and most of the world's continents, Gumilev discerns a geographical pattern in the ethnogenic processes giving rise to superethnoses. According to his view, those superethnoses arising from such bursts of energy, always encompass segments of the earth's surface that extend in a meridional or latitudinal direction, and sometimes the axis of energetic surge extends at an angle to the meridian. But no matter what divisive landscape elements may lie within such territories -- mountains, deserts, embayments of the sea -- the territory always remains monolithic (1973d:593).

What meaning does this observation have for an operational use of the ethnogenic theory to explain explosive behavior of human groups and their respective social formations. While avoiding a determinist position on the locus of such phenomena, if that is what Gumilev proposes, one answer may be found in his
statement that

the only impact of landscapes and ethnic substrates is that two, three or four different superethnoses may arise in a particular epoch within the territory encompassed by the burst of ethnic drive.

Here, I assume his intention is to prove that a relatively simultaneous emergence occurs within a discrete region, and not others. He convincingly argues that appeal to diffusion in the form of "hybridization . . . cultural exchange and borrowing by imitation," must be excluded due to the lack of easily available data if it did occur, and thus "we are dealing here with a distinctive phenomenon requiring separate description." He has thus proposed a crucial point, and one which will require careful observation of his empirical data. And although not necessarily the case for all new ethnic units, they "usually arise from the mixture of several ethnic substrates." Gumilev concludes that no diffusion process can explain the simultaneous rising of ethnic phenomena in separate locations within this meridional, ethnogenic belt, and therefore

the initial burst of ethnic energy must be associated with an additional factor, without which the process could not begin [and] that factor must be sought in natural phenomena . . . that lie in the gap between the social and biological spheres (1973:593).

Gumilev does not answer the question of what constitutes the "additional factor," although I assume that he is referring to "the energy of the living matter of the biosphere," which gives rise to ethnos. But he also implies that an emergent property, the potential of which exists within the ethnos, can be found in certain locations interacting with other energetic phenomena, such as the existing dynamics of human populations and their socio-sphere, to produce the triggering burst of innate drive. At this point, the latent energetic or processual epiphenomenon is as obscure as is the triggering mechanism by which a burst of innate drive is distilled and emerges out of this unspecified quality of the energetic field of a particular set of landscapes.
Retreating to analogy, Gumilev claims that this proposed energetic mutation within a particular set of landscapes now enables him to test his thesis by recourse to the data of ethnic history just as historical geology bases its findings on paleontology, which is essentially a branch of zoology. [consequently] bridges built between scientific disciplines always tend to bear fruit (1973d:593).

But first, he further qualifies the analogical method in claiming to avoid two common errors of historiography, namely the aberration of distance, when long bygone events cannot be rigorously dated, and the aberration of proximity, when unfinished processes are subjected to analysis, [by limiting the research] to a period that has both been thoroughly studied and clearly run its course (1973d:593).

The latter of these two constraints must be violated in order to make any comparison of the model against "still living systems," e.g., the Muslim or Sinitic worlds. But, he opens the rationale for such an exploration by reference to both of these systems, as well as others, such as Greater Russia, which are still present as superethnic systems. While stating that he will obviously "not be dealing with the beginnings of the ethnic history of mankind," Gumilev (1973d:594) opens up broader possibilities, in that

once having clarified the character of our model on the basis of familiar material, we can then extend it both into antiquity and into the recent past as a fully established global regularity. That is the purpose and significance of any scientific discipline.

In regard to Gumilev's proposed method, the extensive treatment of "familiar material" may prove a correspondence between known historical regularities and the theory of ethnogenesis. But likewise, it still leaves a gap between the "empirical generalizations" and the data obtained from actual measurable, phenomenal processes directly corresponding to ethnic drive and rhythm. Three points need mentioning before a brief overview of the historical evidence Gumilev has brought forward to verify his thesis. First, I will not attempt to judge the historical factuality of all of his data, as this extends beyond the bounds of this thesis and my expertise, as it is drawn from widely
ranging periods of history -- Roman through 17th century Eurasian. Second, I will attempt to critique the points that he makes and data he uses in two areas of historical geography in which I do have some expertise, the Muslim world and Central Asia. As Gumilev has been working on Central Asia, (Ancient Turks, 1967; the Huns 1960, 1974; and the Khazars, 1966), I assume most of his empirical data is relatively sound. But the lack of a contextual reference to facts and their substantiation for the Muslim world, distorts his discussion to support a particular theoretical argument. Though it ranges outside of this essay's frame, it is necessary to treat a living superethnic system in the same fashion that Gumilev has used in previous works, and so I make appropriate references to various strong and weak points where further work would be valuable. In this present chapter, Gumilev reinterprets historical geography through the lens of his newly developed ethnological method, focusing on the characteristics of the West European-German superethnos and conditions under which it evolved. The third point I raise involves an attempt to draw out the methodological and theoretical statements and implications embedded in Gumilev's empirical generalizations about the superethnoses discussed in this article, and which I survey beginning with the following material.

On Regularity and Regionality in Superethnoses

Gumilev's command of Eurasian history seems awesome in his ability to weave together seemingly unrelated events, exemplifying processes that he has established as the ethnogenic role in human history. Beginning with the Hellenic superethnos of the 4th century B.C., he focuses on the development of two major periods (longue durée) wherein superethnogeneses occurs within correspondingly "monolithic" geographical regions, and in which he finds no evidence for diffusion and mixing that would explain the ethnogenic outbreaks in physically
isolated places during the same epoch. The earliest region and epoch of ethnogenesis which he treats covers the Hellenic-Mediterranean world, and extends into the Germano-Roman superethnic base for Western European "civilization," which he treats as an evolving set of superethnoses. The second zonal region and period of related, but non-diffused, superethnogenic impulses covers Western, South and Inner Asia, from the beginning of the 7th through the late 16th centuries A. D. The arrangement of data, however, skips around considerably, as Gumilev shifts focus to emphasize one particular point or another which the data seems to exemplify. Rather than superimpose my own chronological or geographic construct on his text, I will attempt to follow his script focusing on relevant points.

Discussing the Hellenic superethnic formation and its conflicts with competing Punic and Persian ethnoses, Gumilev includes the absorption of Macedonia and its consequent leadership in diffusion of the Hellenic superethnos. One particularly important point arises here: as Gumilev states,

the spread of the innate ethnic drive to outlying areas, together with the impact of previous wars -- the Peloponnesian and Theban wars -- made ancient Greece less resistant (1973:594).

The strength of any ethnos to either expand or control territory demands an ability to resist external aggression and internal centrifugal pressures. To emphasize this point, let us follow his argument and data on the ancient Greeks a bit further, seeing that this loss of resistance at the ethno-core became evident from the fact that Athens and Sparta lost their initiative to the semicivilized mountain peoples of Epirus and Aetolia and to the poor peasants of Achea. Not that these peoples acquired particular power, but, with the isolation of the previous centers of ethnic drive, their strength proved sufficient to enter into a struggle for hegemony with some hope of success (1973:594).

Here he makes an implicit statement that ethnics and its innate drive can diffuse. They can move from one particular landscape regime to another, where
presumably their behavioral stereotype and adaptive strategy continue to be fueled by the same innate drive, and they continue to exert a dynamic impact on the landscape and surrounding populations. Which brings up a second point: in successfully migrating and maintaining a dynamism of innate drive during its expanding phase, the ethnos lost its initiative at the core. This point in turn raises the issue that the succeeding occupants were able to exert hegemony over the ethno-core, now bereft of its energized ethnos, but in so doing, did not gain either the same ethnogenic or innate drive as accrued to the previous dominant ethnos. What these facts, or empirically generalized propositions, imply, is that innate drive only occupies a particular landscape in conjunction with a specific population, and once having undergone the ethnogenic transformation, the energy now resides in the population, not in the landscape, which is again reduced to its normal flows of energy, or biocenosis. In fact, the landscape may even be stripped of any surplus, or even sustain a loss in its energetic potential due to possible damaging affects sustained by the warfare among the dynamic, energetically endowed, ethnogenic population. In theory, then, this landscape could either reach or tend towards a homeostasis, with its extant population surviving either as a relic or, as in the Hellenic example, be invaded by new ethnoses who, in turn, reach a relatively stable non-dynamic balance with the relic, and any other existing, populations.

A further implication is found in the theoretical example drawn from Gumilev's Hellenic data: that is, the possibility of successive, sequential ethnogeneses within the same landscape. This possibility cannot be ruled out even if no data is discovered to support it. Nor, however, does it contradict the preceding set of propositions, as any cases of its occurrence would merely confirm that both conditions are possible, and the circumstances of their differences would merit closer examination to explain why one rather than the
other form prevailed. I cannot, therefore, conclude that the potential bioce
nosic energy of living matter, and which Gumilev has proposed as the basis of
the ethnogenic impulse, resides outside the particular landscape, even after a
particular population of inhabitants had undergone an ethnogenic transformation
and migrated away from it, taking their new innate drive with them. Neither
can we as yet establish any rules about a regularity of migration from the
adaptive landscape core by an ethnogenic population leaving it vacant, or
regulating it to some form of a behavioral sink.

It is entirely possible in some cases of ethnogenesis that the core,
(presumably of an ethnos or superethnos), is maintained as an active, energetic
area of innate ethnic drive while various units of its more dynamic elements
migrate outward. These units either expand into contiguous territory or cre-
ate new exclaves of the dynamic ethnos, hence transforming their respective
landscapes. As a mobile segment of a dynamic ethnos transforms secondary
landscapes, which differ in some aspects from the adapted, ethno-core land-
scape, a question arises over the extent to which a behavioral stereotype,
developed as a reciprocal adaptation within a particular landscape, can be
transferred to other landscapes. Is there an optimal areal range within which
the ethnos will be most successful in expanding into, given its particular
behavioral stereotype adapted under specific landscape conditions. Thus far I
have not encountered any evidence in Gumilev's exposition of the landscape and
ethnos model to indicate either a limiting factor or unlimited adaptive capabi-
li ty. I would assume, in this case, that the creation by a successful ethnos
of a social structure and institutions, corresponding to a particular level of
socio-technical development, would entail a greater range of adaptability to
natural environments than a purely biological or natural population could
achieve. Again, the limiting factor would be the level of socio-technical

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development enabling adaptive exploitation of difficult environments. This limiting factor would, however, join the natural and social constraints posed by confrontation with other successful ethnoses or superethnoses, and with the level of initial energy and the rate of its loss to the external environment.

The Western European Superethnos: Its Formative Roman Period

Turning to Gumilev’s discussion of the data from the early Roman period, he finds that having emerged as an ethnos with its republican social system on the Seven Hills, Rome found that its chief rivals for territorial control were the Samnites,

who though not in the least inferior in bravery, had the custom of hiring their young men out as mercenaries to Carthage or Hellenic cities . . . many of those who ventured forth . . . naturally perished, and those who returned were worn out (1973d:594).

In contrast, the Romans kept their troublesome young men at home, and thus retained a source of ethnic drive and used it in the wars against Pyrrhus and Hannibal, thus gaining control over the Mediterranean. The reserve of ethnic energy nevertheless gradually melted away, and this led to the reform of Marius, who established a permanent professional army, in which an iron discipline made possible the use of those endowed with little innate drive as ordinary soldiers. The structural system of the Roman ethnos broke down into two consortia the senate and the army. The army was victorious under Caesar . . . [and] during the next three centuries absorbed the entire energy-endowed population of the Roman empire, and civil wars raged among military groups (1973d:594)

In this concentrated historical vignette, a number of important theoretical points arise. First, some aspect of an ethnos, in either its natural or socio-cultural structure, sets a "policy" concerning whether or not the energetic, warrior types will be retained, although troublesome, or "sent out." In this case, as in that of the Samnites, is it an aspect of the behavioral stereotype which through natural affiliation restricts or encourages the movement of an ethnos' energized members. Is this a collective decision making among all sub-units and families in the ethnos, or does a hierarchical ordering
of the social structure allow a limited group or individual to decide the fate of both young men and the ethnos, by committing them to external ventures, or commanding them to remain. This latter possibility would necessarily imply a convergence of behavioral stereotype and phenotype with social structure in order for the energy endowed youth to follow orders, otherwise the very energy proposed would drive them to disobey commands and either engage in fratricidal contests, or leave on their own adventures. We can probably conclude, therefore, that some combination of these three possibilities exists within each emergent ethnos, and the further combination of natural, historical and social circumstances will determine the predominant pattern for each ethnos.

A second point arises here, as I would assume that if the Roman reserve of ethnic energy melted away, then, like both the Samnites and Hellenes, the core would be de-energized due to loss of those energy-endowed individuals. But as the Hellenes were so weak as to be overrun by ethnoses with little dynamic energy, and the Samnites were overrun by a dynamic emerging Roman ethnos, I would further assumed that either possibility exists. But the Romans, although drained of energy at the core, were able through social organization to compensate and continue to succeed thanks to a minimal number of energy-endowed individuals. Thus, from these three examples, the fate of an ethnic core weakened by loss of its energized individuals within the population remains open. The possibility, however, that a core may retain its energy and continue to reenergize new individuals to replace those lost has not as yet been shown as an option.

A third point involves the split in the structural system of the Roman ethnos, dividing it into two consortia. Here we find that reversibility is possible, that a larger ethnic unit may divide into two, presumably new,
subunits during what is also presumed to be its declining phase. This loose structure, following in the corpuscular rather than rigid form of system, associates this process with its natural as opposed to social conditions, as such a corpuscular system of individual units is easier to fragment than a rigidly linked structure. As Gumilev has already argued, any ethnic system tends towards a maximum expansion, then a reduction in structure tending towards simplicity. But if the structure of the system in its expansive phase has developed sufficient complexity and diversity, especially in its social forms and variety of adaptation to landscapes, then its tendency would be to remain strong and intact over a longer period of time. Gumilev demonstrates this fact in the institutions of Roman law, in which the social structure may remain long after the ethnus has dissolved. But even a strong and diverse ethnic formation may fragment internally, creating new sub-units, although it has not been shown as yet that any such sub-unit can in turn undergo an energetic burst to grow into a new ethnic unit of a larger size.

As to the possibility of a division and the further growth of one unit resulting from that division, Gumilev's capsule exposition of Roman history indicates that the army eventually became the sole dominant force in the Roman empire. Not only did it absorb the "entire energy-endowed population" in internal strife, it continued to expand the empire's territory, gradually becoming less Roman and less able to hold the marches against rebellions and invasions. Gumilev asks what happened to the Roman legions, did they "become weaker, or did the neighbors of the empire gain in strength? Probably both, and that is what is important." As to why they became weaker, Gumilev (1973d:595) states that, having joined the legions, ethnic Romans,

tended to lose [their] innate ethnic energy more rapidly that would have been expected as a result of military defeats . . . [since in many coups], the soldiers vented their grievances against their
commanders by killing those officers who had sought to maintain discipline . . . [and] exterminated the most responsible, effective and loyal warriors, whose places were taken by unprincipled people.

The effects of this internecine conflict during the third century, and corresponding loss, was felt throughout all strata of the entire Roman ethnos, as the army "was attracting the entire energetic element . . . because any honorable young man could make a career only in the army, though at the risk of his own life." The way out was found from the time of Aurelian, through recruiting foreigners into the army, and so, as Gumilev (1973d:595) states,

by the start of the fifth century the entire Roman army was made up of aliens. This meant that by ceasing to provide voluntary defenders of the homeland, it had lost its innate drive. The structure, language and culture of the empire were preserved through inertia, but genuine Romans could be found only among a few families in Italy.

Following the demise of the Roman ethnos, and the growing heteroethnic character of its empire, its marches were defended by an army of foreigners with decreasing results until its remains were "saved only by Illyrian-Thracian forces and their leaders, who became emperors from Aurelian to Diocletian."

**Transformation of the Roman Superethnos by Christianity**

Gumilev turns back to the second century to discuss an upsurge of activity in the Roman empire's eastern provinces, and in some northern areas, as "signifying the start of the ethnogenesis of new peoples." Rather that taking the shape of independent forms rising towards superethnoses, these ethnic surges were absorbed within the Roman superethnos, but "assumed an unusual dominant form, the creation of religious communities of mixed ethnic origin, comprising both Christians and Gnostics and heathen Neoplatonists."

This runs counter to the usual assumption that Christianity was simply a religion of slaves, which, as Gumilev points out, is generally correct, but ignores one important fact, that
most of the slaves were foreign captives, and marriages between
slaves from different tribes were permitted by their masters, but
marriages with non-believers were prohibited by the leaders of the
Christian communities, which we will treat as consortia (1973d:595).

These hybrid consortia, however, were

endowed with a high degree of lability. [They] usually . . . tended
to be unstable and disintegrate within two or three generations, but
in this case an additional factor must have been at work, imparting
to . . . [them] a tremendous burst of innate energy, [and] as a
result of its capacity for sacrifice . . . won recognition as a
church in 313 A.D. and began to replace imperial power (1973d:595).

Here, an energetic burst is transformed into a capacity for sacrifice rather
than for militaristic expansion. This unique and passive form of expansion
marks a significant anomaly in the general pattern of bloodshed accompanying an
ethnogenic expansion, although persecutions and sacrifices were, of course,
equally bloody! But not all such energetic processes need be manifested in the
same form, other than a tendency to expand and migrate. Nevertheless, all
ethnogenic bursts contain a capacity for sacrifice, in that the most energized
individuals, tending to expend their energies in forms of conflict, must sub-
consciously realize, as do their families, that many of their lives will be
sacrificed to this innate energetic urge. In some ways, this theory provides
an reasonable explanation for the seemingly senseless violence throughout
history and the propensity for populations, families, mothers, wives, and
offspring, to accept the "fate" that draws their able-bodied men off to war.

It actually seems more reasonable than either territorial or genetic explana-
tions of the sociobiologists, or the cognitive reasons found in social and
humanistic attempts to explain aggressive group behavior at this level.

The visible surge of energy throughout the Roman slave population and
frontier ethnoses, "must have been preceeded by a period of incubation." In
this period, Gumilev (1973d:596) finds two cases of arrested ethnogenesis, the
Judeans and Dacians, both of which,
were the actual initiators of resistance against Rome ... not the Christians or the Goths ... [and] both were physically destroyed by the military machine of the Roman empire. The only ones to survive were those Dacians who agreed to become Romans, and those Judeans who lived outside Palestine, and had not experienced the Romans' drive.

The development of each of these enthoses involved an energetic surge against Rome which failed, but in weakening the Roman empire, it set up the conditions for Goths and Christians to succeed with whatever energy they manifested. That energy proved sufficient for the task. Here, Gumilev (1973d:596) finds a problem, in that the general pattern of description in the historical sciences tends to record major events ... but not lesser violations of the stereotype of behavior such as phenomena that tend to go unnoticed by contemporaries or tend to be regarded as accidental deviations from the norm ... therefore [we must] allow for a margin of error of +/- 150 years that will not affect our final results but will enable us to view the period from 150 to 450 without further differential as an integral epoch. This way we come directly to geography.

Regarding the geographic extent of this period of ethnogenic activity, Gumilev's following description is correspondingly mapped below, (fig. 12). He then plots "the regions with evidence of a surge in ethnic drive" during this 300 year epoch, obtaining a monolithic territory extending from north to south, but with poorly defined boundaries. The axis of the study region runs from the island of Gotland through the mouth of the Vistula and the western portion of Asia Minor to Palestine; it cannot be traced further south. The regions adjoining the axis on the west -- the Vistula-Oder interfluve, Pannonia and Thrace -- and on the east -- the right bank of the Dnieper, where the Antae lived; Armenia, western Persia -- also displayed evidence of an ethnic surge (1973d:596).

This macro region, now becomes the locus of activity during the period of heightened ethnogenic energy. Two questions arise here: assuming ethnogenesis as a force of nature, what other natural phenomena, if any, can be traced to this particular time-space nexus; and were natural conditions different during this period throughout the landscapes of peoples beyond the region just outlined [who] continued to remain in a state of energetic entropy ... [and] lacked that additional
quality that would have enabled them to defend their property, families and lives against enemies . . . [or] allowed themselves to be conquered? (1973d: 596).

Gumilev has implied that such external natural conditions need not be present for ethnogenesis to occur. Instead, professing a simple hypothesis, he attributes (1973d: 592) the emergent property inherent in such an energetic burst arising out a natural ecosystem to

the presence of two or more landscapes and two or more ethnic substrates [which] are easily explicable in terms of the energetic character of ethnogenesis, that is the need for existence of a difference of potentials within the system for its further leveling.

Having discussed the preceding issue earlier, I need only comment that, unlike closed physical systems such as air masses, it is difficult to find an actual open bio-social system which could respond with a sufficiently powerful energetic surplus as to produce such an emergent property. It is doubtful if such a property arising from that transformation could enable a flow of energy from one system to another, in order to stabilize, balance, or "level" the two systems. While this hypothesis is extremely interesting, the notion of human events analogous to thunder storms and lightning, would demand extensive research into current bioenergetic and related transformations. These, in turn, would have to be observed within ecosystems exhibiting anomalous or irregular activity, and for which there is the ability to generate data. This, of course, would require some means for identifying actual phenomena, assigning some magnitudes to them, and devising means for measuring them.

In short, looking to other relevant, co-present and co-related phenomena in these natural ecotropic zones of proposed ethnogenic activity; or exploring existing energy differentials and transfers, would require extensive research, both theoretical and empirical, necessarily involving a massive interdisciplinary effort. As even the discussion of such an activity goes well beyond the
scope of this essay, I shall restrict the process to material presented by Gumilev; that being within a state of analogy, using a limited range of natural science concepts to explain historical phenomena.

Despite Gumilev's claim that this phenomenon of regionally present activity and external stasis, "must have been evident to its [sic. Roman] contemporaries," there may have been other reasons why "in 330 the emperor Constantine transferred his capital to the small town of Byzantium." That "all the peoples endowed with ethnic drive converged on this new centre" does not seem unusual, nor particularly indicative of solely ethnogenically innate behavior. In discussing the shifting of populations he assumes were acting under the influence of ethnic drive, Gumilev (1973d:596) convincingly states that by the 6th century a highly diversified and multilingual, but monolithic ethnos had taken shape, known to us as Byzantine. The Greek language, inherited from antiquity, was the commonly understood state language, but at home everyone spoke his own native language. Very soon this "Byzantine" ethnos turned into a superethnos as its sway extended over Armenians, Georgians, Slavs, Keriats, and Ongguts.

We find here the first description, albeit rather limited, of how a superethnos evolves. Even if the statement follows historical fact, that the Byzantine ethnos extended "its sway" over other ethnoses who shared in similar enough behavioral stereotypes to enable them to adapt to the new amalgamated Byzantine stereotype, the actual mechanics of both the superethnos transformation and its effect on those ethnoses it absorbed remains vague.

Not answering more concise questions about mechanics, Gumilev shrugs off subsequent events as "of no interest," but rather, "a matter of history." He has thus satisfied his intent, which was to demonstrate that the burst of ethnic energy during the period of the second to fourth centuries occurred within a spatially monolithic territory that included regions with totally different social, economic, ethnographic, anthropologic and population-genetic features (1973d:596).

Concluding this example of the Byzantine superethnic formation and related
energetic ethnic processes within a specific zone, Gumilev rhetorically asks if "this was just an accident." In order to reply in the negative, he proceeds onward to another epoch and other examples of similar historical generalizations. This time, however, he includes the Muslim world within a time period and zone of ethno-energetic activity, thus coming closer to providing data which I am competent to discuss regarding its validity.

Eurasian Ethnogenetic Events: 7th through 9th Centuries

Proposing another energized region developing in the seventh century, Gumilev finds this one to extend further in all directions, including Tibet, Northern China, Northwest China, and most importantly, Arabia. Arabia's importance in the historical geography of this region emerges from the fact that Islam has become one of the most crucial of all known superethnic systems. Reserving discussion of this point for later, I will just point to the strategic location of the Muslim ethnogenic core, straddling Europe, Inner Asia, Africa, and the sea lanes to India and the Spice Isles. Also, as the Muslim world system arose within this seventh century ethnogenic nexus, then it is the only one still extant and of continuing importance to the larger world. Moreover, its time-span overlaps the ancient and modern periods of human socio-technical organization. I will discuss Gumilev's argument about the qualities of this particular geo-historical nexus, as he refers to the Muslim world, thus

At the beginning of the seventh century, a burst of ethnic energy was recorded in Arabia. It was also founded on a religious basis and an ethnogenic background since Muhammad had declared that a Moslem could not be a slave and would accept in his community those slaves who turned to Islam. The propaganda of the new faith had been preceded by an incubation period during which the ethnic drive built up. In the sixth century, Arabia produced a pleiad of poets, and there is no need to demonstrate that good verse cannot be composed without an innate surge (1973d:596).

Three points are apparent here: that an ethnogenic burst can have a
"religious" basis and vice versa; that as a Moslem could not be a slave, any convert was, de jure, no longer a slave; and that the production of good poetry is an indicator of innate drive. On the surface, I find some problems in these claims. In particular, I see a rather weak link between conversion of slaves and good poetry as primary indicators of innate ethnic drive as tied to the rise of Islam through a combination of religious and ethnogenic processes. Is there a difference between a "religious basis" and ethnogenesis, or is the former an indicator of the latter. Or, would not "religious" movements be social phenomenon, in that, ethnogenesis is a natural occurrence by which a group of people emerge from an inert population, and then evolve necessary social institutions in the course of their adaptation to both a natural and cultural landscape according to their state of social development.

If, for example, in explaining religion in natural terms, one turns to E. O. Wilson's (1980) sociobiology, one finds a premise that H. sapien is predisposed to be religious, or to accept some claims of non-material existence beyond the immediately perceptible reality, and to participate in rituals and ceremonies appropriate to such a system of claims. The propensity for religion would thus preceds the particular form. An emergent religious form would either co-exist with an emergent natural process such as ethnogenesis, and thus a "natural" attribute, or conversely, evolve as part of the social forms within an ethnogenesis, hence a social artifact. As we find that some religious or ideological movements (treated the same in biosocial terms), can emerge within an ethnos not in its expansive stage, a third possibility presents itself: that what we view as a religious "surge," is an energetic phenomenon similar to or indicative of ethnogenesis. Likewise, both social movements not associated with ethnogenesis and energetic phenomena can be religious in form. What, then, would differentiate between the types of energy that stimulate the surge
of human activity and that crucial element in ethnogenesis, the capacity for sacrifice. Have we again returned to Max Weber and a model of "charisma," relabeled as innate ethnic drive, followed by "routinization" in the form of social institutions. If, however, we simply accept that what Gumilev terms "a religious basis," is but an indicator of a particular aspect of an ethnogenic behavioral stereotype, then we have found some reasonable compromise.

It seems improbable that any ethnic rhythm as a collective behavioral stereotype could exist without some unique variant of rituals and ceremonies synthesizing in some form its co-adaptive relation to a particular landscape. Its very strength, in fact, would have involved an evolutionary adaptation of its rituals dividing an inert population and emergent social institutions. Religion, as "the ties that bind a people together," which its Latin root implies, must be seen as some integral component of ethnogenesis, manifested in some way as part of its particular behavioral stereotype, and its rituals as integrating both the ethnic rhythm and traditions or signal heredity by which the rhythms are transmitted generationally and to new members.

The problem of slavery in relation to a Muslim ethnos seems vague in Gumilev's treatment of it, especially if we look at shades of dependency or domination, as suggested in Watson's (1980) study of Asian and African slavery. It is true that any slave who converted to Islam was accepted as a fellow Muslim and a slave only unto Allah, and not to any man. But this was a metaphysical principle later taken into law. The early Muslims were not slaves, in fact just the opposite. For every slave like the famous Bilal, who converted to Islam and whose freedom had to be bought, there were many more converts who were the offspring of the elite Quraishi clans. Leadership continued to be exerted from an elite base throughout all of early Islam, despite the mass of rank and file troops made up of ordinary Bedouins, supported later by their
servants and retainers drawn from captured prisoners of war. Without getting into the whole problem of slavery in the Muslim world, it may suffice to point out that the community, initially a convivium turned convivium, and later ethnos, was predominantly made up of free men.

Lastly, in dealing with Gumilev's cryptic reference to a poetical Muslim ethnogenesis, the emotions of poetry can readily be viewed as an indicator of energy. Certainly there are many historic examples of poetry integrally catalyzing people's emotions and moving them into physical action. But, for example, could a burst of poetry, such as spontaneously emerged from the post-war social frustration of the 1950's American "Beat generation," be taken as a general indicator of ethnogenesis. Probably not. And yet, in the case of the Islamic movement, it is possible to see a surge of poetry as an indicator of an incubation period preceding it. As one of Islam and Arabic poetry's interpreters, H. A. R. Gibb (1963), states in discussing the rise of the Qusida form in the "Heroic Age (c.A.D. 500-622)"

the most striking feature in Arabic poetry is its unexpectedness. Over and over again, with scarcely a hint to give warning of what is coming, a new literary art emerges fully-fledged, often with a perfection never equalled by later exponents of the same art. Nowhere is this element of surprise more striking than in the first appearance of Arabic as a vehicle of literature. At one moment Arabia seems, in a literary sense, empty and dumb except for some votive or businesslike inscriptions in a variety of dialects. At the next, companies of poets spring up all over northern Arabia, reciting complex odes, qasidas, in which a series of themes are elaborated with unsurpassed vigour, vividness of imagination, and precision of imagery, in an infinitely rich and highly articulated language, showing little or no traces of dialect . . . (1963:13).

By this example we can follow Gumilev's reasoning that poetry might have, at least in this case, a function in indicating ethnogenic incubation periods. From the actual evidence presented by Gibb we can see some major shift towards a new cultural complex woven onto the tribal surface of Arabia. Several indicators are implied, as Gibb first looks at the long historical evolution of
Arabic poetry, its ancient forms of metre were primitive, and finds
A loose iambic form called "rajaz," consisting of short rhyming lines, probably developed out of brief comminatory utterances in rhymed "saj" which were thought to possess magical powers... But between this... form common to all the Semitic literatures, and the metres of sixth-century poetry there is no apparent connection, and no other Semitic language has anything resembling the latter... [Thus] the exclusion of "rajaz" from the permissible metres in the "qasida" indicates a conscious dissociation of it (1963:14).

Here we find that there was a rupture, some internal transformation within the tribes of Arabia, and as Gibb puts it, with "no evidence to support the suggestion" of any particular external borrowing. Furthermore,
from this came that astonishing outburst of poetic talent, spreading within a period of a few years or decades among all the tribes of Arabic speech, from Mesopotamia through Najd and the Hijaz, and down into the wild ranges of 'Asir, and finally into Yemen. It called out all the powers hitherto latent. (1963:15).

I find in Gibb's discussion of this unique phenomenon a valid analogy to Gumilev's contention that an outburst of poetry signaled the incubation stage of this particular ethnogenesis. As Gumilev gives no other examples, it is assumed that poetry would be but one form taken by the energy of a people during its incubation into an ethnos. During the Arabo-Islamic ethnogenesis, I find distinct evidence that a period of poetry foreshadowed its bursting on the historical surface, again quoting Gibb (1963:30):

the most important cultural service which the poets rendered was their creation of a common standard of High Arabic, which as an instrument transcended narrow tribal limits, sharply distinguished Arab from non-Arab or metic, and thus supplied the substrate for a new consciousness of Arab nationhood... this new national consciousness needed only a spark to awaken it. Once the spark was supplied by Islam, it was to find expression in the great movement of expansion that broke out with startling suddenness when the cities, with their great powers of organization, supplied the cohesive force which so marked a deficiency in the tribal society.

With the exception of the question of slavery, it would seem that Gumilev's treatment of the ethnogenic aspects of Islam bears up under scrutiny. But, let us follow his exposition of the latitudinal spread of this "area
encompassed by ethnic drive" further east into Tibet. In 632, only a decade after Muhammed's Hijra to Medina and its formal beginning as a new convivum, Gumilev (1973d: 597) states that:

the Tibetan king Srong-tsan-gampo, embroiled in a struggle against his nobles, invited Buddhist monks into Tibet. This suggests a high degree of ethnic drive, which must also have been preceded by an incubation period in the sixth century. In Tibet too the struggle had a religious basis, but not to the extent of obscuring the social factors -- the rivalry between the king, supported by the people, and the nobility which had the support of the local priesthood.

In examining this second ethnogenic example, we can find parallels in the religious arguments made earlier about Islam, but here Gumilev stresses "social" factors. Were there not equally significant social factors occurring in Arabia at the same time. In fact, many scholars have attempted to develop a case for social and economic bases of the Islamic movement and its rapid dynamic expansion. Surely, Gumilev must be aware of such arguments and therefore must also assume the inclusion of social factors in the equation of an Islamic ethnogenesis, only expounding the religious as relatively more dominant in that case, whereas the Tibetan case would be the obverse. If one were to look at religious movements led by poet-mystics and "hanifs" or monotheistic desert mystics, then the evidence points to a deep disturbance in Arabia prior to Muhammed's prophecy. Indeed, one of the criticisms leveled against the prophet Muhammed was that he was a Kahin, one of those mystic poets who foretold the future by trance visions expressed as rhymed verse. Given that a behavioral stereotype was established, a new prophet would have to rupture existing codes while conforming to elements of prior communication patterns. Again, Islam evolved to a superethnos status and continued to expand, whereas the Tibetan ethnogenesis represents a case of arrested development, as "the strain of the struggle was such that Tibet disintegrated at the end of the ninth century, an all the participants in the struggle were killed" (Gumilev,
This second example, taken from Tibetan history, provides the evidence of arrested development, but as to its social and religious consequences on further Tibetan ethnoses, especially with the importation of Buddhism, the problem again lies outside of the limits of this thesis research.

Keeping to the limited text provided as evidence by Gumilev in his argument, we now turn to his third example, Northwest China. Finding that the ethnogenic pulse did not extend into China proper, but only on its northwest marches, Gumilev (1973d:597) includes Shensi and Gansu in this surge, which generated the Turgut and Uighur ethnoses, and extended out into the steppe "where the founders of the Sui and Tang dynasties and their advisors were born." Here he finds the ideal conditions for his model to operate, as these provinces possessed all the essential conditions for ethnoogenesis: a combination of steppe and mountain forest landscapes; a hybridization of Chinese with Tibetans and steppe people (1973d:597). Here again, Gumilev finds a homeostasis until "the additional factor, giving rise to the burst of ethnic energy" arrived to engage these elements in a transformation that "became evident only in the sixth century and laid the basis for medieval China." Indeed, this energetic shock was to provide the dominant populations ruling China until the Manchu invasion and conquest of the 17th century. According to Gumilev, this would have included: the Sui and Tang dynasties, the Song, Jin and Mongol Yuan, and Chinese restoration under the Ming; a full millennium of political change during which the Chinese population grew from around 50 million to over 250 million; the introduction and fading of Buddhism; and China's furthest territorial expansion, with vast lands in the west and south incorporated into the Chinese realm. During this period, Chinese products, technology and knowledge were widely diffused, reaching the West through the Muslim world, while influences from the West were likewise introduced into China. The steppe margin ethnogenic energies nourished waves of
expansion and conquest building a powerful medieval China. But no matter who ruled China, "a harsher fate awaited the steppe people."

Involved in expansive conflicts generated by an emerging ethnic drive, the steppe peoples fought each other into oblivion, suffering a similar, but much expanded fate as befell the Tibetans in the Lhasa valley, and about which Gumilev states:

the ethnonogenesis of the Turgut was broken off in the eighth century when they were defeated by the Uighurs, and the Uighur's ethnonogenesis was disrupted in the ninth century by the Kirghiz, who pushed the Uighurs out of the steppe into oases, where the survivors mixed with indigenous populations giving them the Uighur name (1973d:597).

Not only did a series of conflicts decimate those people mentioned by Gumilev, but even the successful conquerors of China, from Jin to Mongol, were eventually absorbed into the Han ethnos. A unique case, however, and one crucial for my work, emerges in what Gumilev mentions as the transition of Uighur from a steppe ethnos to a mixed frontier population. Much of the evidence uncovered in my research on the origins of the Muslim Chinese, or Hui ethnos, points to their descent from this source. The marginal position held by these later Uighurs was utilized by the succeeding dynasties, giving the Uighur important frontier tasks as border guards, mail carriers, postmen, translators and horse breeders and trainers for both courier and military service. With their conversion to Islam, and stronger communicative connection with rapidly Islamicizing peoples of Western Turkistan, these later Uighurs lost their Uighur identity. Although assimilated into a larger, Muslim superethnos, once having become sinicized in language and appearance, they took on a Hui identity. The name 'Hui', having most probably originated as a term for the Uighur, gradually drifted into a greater assimilation among the Oasis Turko-Persian stock of Eastern Turkistan, emerging as a new ethnos within the old, but distinct from the more sinicized Hui. Current research (Rossabi, 1975, 1979; Lipman, 1984)
indicates that the Uighur became Wei gu ren ( ), while their sinicized, Moslem descendants further east became Hui Hui ren ( ) in an ethnogenesis which doubled landscapes and populations, as suggested by Gumilev.

To substantiate his claim that this sixth century ethnogenic pulse coincided with a particular geographical area, Gumilev gives a further example, this time from a more southerly place, India. Here, the Rajput ethno-core lies "south of the 30th parallel ... halfway on a straight line between Lhasa and Mecca." Despite a paucity of Indian history from this era, Gumilev finds reference to this earlier ethnogenesis,

the appearance of the people with the unusual name Rajputs, kings sons, only from the events of the eighth century ... The Rajputs were a composite of countless small tribes, some of which ... came from Central Asia ... others [were] of local origin ... in the seventh century occurred the so-called Rajput revolution, which overthrew the Gupta dynasty ... exterminated the Buddhist monks, who supported Gupta, carved up India into a large number of small principalities and established the system of castes, which was to survive to the 20th century (1973d:597)

Gumilev wants to link these events to an ethnic surge which would explain their development and moreover, connect them to similar processes occurring during the same period at different, non-communicating, non-contiguous places within a larger zone of occurrence. He again cites "a coincidence in time and place of an ethnic surge, and ... [is] confronted with the puzzling ineffectiveness of socio-economic, cultural-ethnographic and population-genetic barriers" in restricting any connection between these events. But he assumes a definite connection, and bases his argument on this connection being a natural process within the biosphere, not even considering the possibility that no connection may exist between these events. Is there a necessary connection between these events, and if so, on what level. Does Gumilev's argument really stand up to any critical test. That is, does a natural link exist because of similarity of human processes (e.g., political instability, conflict and the emergence of a
new group with a singular common identity) combined with the unity of the biosphere. If, for example, phylogensis, although in non-identical forms, occurs simultaneously in different places on the planet with no perceptible possibility of diffusion or contact between the affected populations, can we attribute it to a Zeitgeist, or a common phenomenon subsisting within the total biosphere. Does it, then, emerge at this particular time in these places because of a similarity of natural conditions, or an energetic pulse of some kind, travelling throughout the planet's physical field. Or would a random factor provide a sufficient explanation for any of these similar human phenomena that might occur without any necessary connection. These questions have not found solid answers in Gumilev's work, but also go well beyond my treatment of his theories at this level.

In attempting to answer the 'whys' of the similarities which he found, Gumilev continues to argue that

the innate ethnic drive is undoubtedly an inherited characteristic, but it could not have spread through pan-mixia because the anthropological features of Arabs and Tibetans, Indians and North Chinese are so different that interbreeding would have passed on the features of both parents to the progeny. Yet the Arabs display no Mongoloid traces whatever, and the Mongoloid character of the Tibetans is beyond question (1973d:597).

Here I find a slight problem. From the eighth century on, Arabs in Trans-Oxiana and Khurasan interbred with local women to create new biological populations sharing traits of both parents. That process is most distinctly indicated in Arab features among both the Hui in China, and many coastal Javanese and Swahili, as well as among their offspring that re-entered the Arab heartlands, especially the Hijaz, Gulf coast, Oman and Yemen. In addition, not all scholars are in agreement about the racial origins and composition of the Tibetans. Within the Tibeto-Burman family, their language is distantly related to the Sinitic languages, but a large part of the Tibetan population lacks many
of the physical features common to the Mongoloid race. The only safe assumption is that their history has involved a bridge between the Indian subcontinent and the Inner Asian populations of proto-Turks and Mongols as well as other Sinitic peoples in Burma and the Southeastern Asian mainland.

Gumilev proposes that racial characteristics are not significant in ethnos, and although its behavioral stereotype is inherited, it is neither a genotypic nor phenotypic element. And as racial mixing cannot account for it, does it make any difference whether such racial mixing has or has not occurred. Earlier, Gumilev found that exogamy carried a different behavioral stereotype into the family and ethnic unit that confused the unity of tradition, weakening the transmitted ethnic fabric, and hence the effectiveness of its adaptive relationships. But as he claimed that it did not to involve either genotype or phenotype, he concludes,

we are dealing with a geographical phenomenon proceeding against a historical and biological background . . . [because] innate drive is not only inherited from one's parents, but arises at certain periods in strictly defined regions with indistinct boundaries (1973d:598).

Gumilev now returns to building a case from generalized empirical evidence derived from the rise of Western Europe as a superethnos. He discusses a geographic pattern of places deduced to be energized because of the dynamic historical events involving upsurges of peoples newly appearing on the scene, and compared to other places viewed as non-energized because a relative lack of evidence showing any extraordinary historical activity at that time. He also continues to argue that "the irreversible decline of ethnic energy [inevitably leads] to a disintegration of cultural, economic and political power". But does really prove the point by merely citing examples of how and when particular groups who emerged to dominate certain regions at different periods of time. He seems to argue that not all people are equally endowed
with this energy, and that those who are so unfortunate as to be thus endowed, are fated to ride off into battle, explore remote places, or generally act rashly and adventurously. Referring to the Vikings, he demonstrates that they were only a relatively deviant social group from among the Scandinavians, as when a young man left his kin to join the Vikings, tears were shed as if he had died . . . [they] were a people of rather unusual mold . . . endowed with innate ethnic drive . . . [but] other Northmen, less so endowed, remained at home and caught herring (1973d:598)

Claiming that the Vikings would not have accepted these lesser endowed country men had they wanted to join, he portrays them much like the later Ukrainian Cossack communities. He also finds that their raids into the rest of Europe exposed the fact that many rulers were "incapable of organizing a defence, thus arousing legitimate discontent", and leaving room for energized segments of the various local populations to rise up in defence of their homes. Thus, a few military commanders with initiative began to lead those who were willing and able to defend themselves, . . . [as] the population preferred energetic rulers and ceased to give their allegiances to the legitimate monarchs. The feudal lords thus seized power in Europe (1973d:599).

Energized individuals became the feudal landed class around which Gumilev proposes that the system evolved, and their constant "need for able followers" who worked only for pay led to the motto, "Nullum officio sine beneficio, i.e. no service without reward." But as this system developed, their constant internal warfare "tended to devastate the European countries no less than inroads from outside." As a result there was a need to get rid of these overly energetic individuals, hence the Crusades as the first form of colonial expansion. This process recurred as "a similar outflow of surplus energy occurred in the 16th century to the West Indies and in the 17th century to North America, helping to quieten things down in Europe."
Changing Definitions of Nation and Ethnos

Establishing a baseline for abbreviated historical generalizations that support his hypothesis within a particular regional time frame, Gumilev suggests that ethnologists can use a more detailed history of subsequent events in order to "construct a model of the Roman-German superethnos" which he has begun. This suggestion follows the lines of his earlier work in historical ethnologies of the Khazar (1966), Huns (1960, 1974) and Ancient Turks (1967). In his definition, "ethnologists view the birth of social institutions as an indicator of deep-seated processes correlating to the history of society with the history of nature" (1973d:599). Whether or not this is generally agreed upon by ethnologists working on historical reconstruction of past ethnoses, or is Gumilev's definition of both his own perspective and what should be the concern of ethnologists, is another matter. Nevertheless, I accept his definition as a valid ideal, and one that is worthy of achievement. In following his method to achieve a historical reconstruction of ethnogenesis, the data of social indicators is drawn from not only recorded events, but also, as shown in his studies of Khazar and Eurasian landscapes, from the natural history of paleogeography and archeology, which bridges both categories.

Another indicator of ethnogenesis, as pointed out by Gumilev, is "a change in the ethnic dominant." He refers here to the dominant form or combination of cultural and socio-political style which characterizes most ethnoses, as opposed to the hegemonic or other type of situation whereby one ethnus dominates another one. This dominant form is a "phenomenon closely related to the growth of ethnic drive." But it is not clear whether Gumilev refers to an overall historical increase in the quantity or quality of ethnic drive. Does this mean, as I asked earlier, that as the total human population increases, so
does the frequency of occurrence or total number of ethnogenic cases, or is there some hypothetical ratio by which we could measure these changes. Still not dealing with these questions, Gumilev (1973d:599) suggests a qualitative change, thus, "in the ninth century, ethnoses of a new type began to make their appearance in Europe, known to their contemporaries as 'nations' (from the Latin 'natio', 'birth')." But what constitutes this qualitative difference remains to be seen. Nevertheless, he does state here (1973d:599) that, when referring to nations in that period, e.g., Charlemagne's "Holy Roman Empire of the German Nation, . . . the term is equivalent to our 'ethnos' and not to the modern term 'nation' or 'people'." Similarly, "nation" in this historical context also differs from the Soviet scientific designation of "a particular social function," e.g. in Dzhunusov's (1966:24) definition, that the nation is "the highest form of an ethnic community of people based either on bourgeois or on socialist relationships," or according to both Tokarev (1964) and Agayev (1965), who relate it "to both the capitalist and socialist social systems."

For comparison, Gumilev (1973d:601) presents the standard, Marxist sociological definition of ethnos, thus:

an ethnos is a historical community of people, such as a tribe, people or nation, that gives rise to distinctive phenomena relating neither to the economic base nor to the institutional superstructure -- Filosofskiy slovar, Philosophical Dictionary, Moscow, 1963:320.

But even during the ninth century which, according to Gumilev, was the particular historical epoch in which the term "nations" was first used to designate the emerging, and in many cases continuing, ethnoses of Western Europe, that term was archaic, "for it designated a vanished superethnic entity." By superethnic entity, Gumilev means the German "Nation" of Charlemagne, out of which arose both the modern French and the modern German ethnoses which emerged at this time, alongside other now-existing ethnoses. In his words, these were
Provencals, Aquitanians and Bretons -- that subsequently merged into the French ethnos [but] these first ethnoses [initially] resulted from the disintegration of the Frankish state [Charlemagne's nation] . . . for the process of ethnogenesis occurred simultaneously and in parallel with the growth of feudalism. This coincidence was characteristic not only of Western Europe. Elsewhere similar processes of ethnogenesis were superimposed on other social structures, and the resulting forms were quite distinctive (1973d:601).

An important proposition rests on the relationships between ethnogenic and social forms, as it could be argued that what Gumilev interprets as a symbiosis between natural and social forms of interaction was in fact only a social process. That is exactly what Kozlov seems to argue in his criticism of Gumilev's environmental determinism, which will be addressed in more detail later. But Gumilev seems to imply more than chance, or random coincidence in the relation between changes in social structure and ethnogenesis. It stands to reason that if ethnogenesis is accepted as a deeper, natural level of human organization, then the particular behavioral stereotype arising within the energized population's co-adaptation with a specific environment could just as easily change their social relations and forms of social organization.

Continuing to discuss the ninth century division of the Franks, Gumilev sees the two grandsons of Charlemagne, respectively "Charles, the King of the French and Louis, King of the Germans," as emerging from what was previously a nation of people, juridically Roman, but German by birth. These new conditions involved the transformation of dominant ethnic forms into a new type of community, based on a unity of origin and language, [which] now took priority over the juridical form [and thus] demonstrated the appearance of a new ethnic dominant, i.e., a principle on the basis of which people of a new make-up began to combine into groups. That is why the disintegration of the Western European superethnos (Romans) into "nations," rather than into communes, tribes or poleis -- city states -- must be viewed as a local variant of the process of ethnogenesis (1973d:601).

Here, the underlying proposition is that, not only does a particular regional epoch of ethnogenesis occur in different times and places, but within each of
these historical-geographic epochs exists the possibility that the organizational forms common to previous ethnoses can be transformed, and new forms established. Gumilev uses the term "epoch" as it is generally referred to, the formative period of any historical process or state. Here we encounter the full weight of his dialectical proposition, that a reciprocal interaction between social and natural forms of transformation and evolution can influence either or both of their forms within an ethnogenic epoch. And, as social forms evolve, and ethnogenesis occurs within differing stages of that development, so the actual forms taken by ethnogenesis and the morphology of the new ethnic formation can likewise evolve. The most stark possibility of this proposition involves our adaptation to an increasingly artificial landscape.

Assuming an evolutionary reciprocity between social and natural forms within a regionalized series of ethnogenic epochs, might not the increasing hegemony of an urban, artificial landscape in human affairs and the modern means of communications, imply that an ethnos cannot be born in isolation. Likewise, how could an ethnos maintain a homeostatic relationship with its landscape without interference both from the larger surrounding ethnic units, and from the larger surrounding and even encompassing social systems. Implicit under these present conditions is the actuality of Wallerstein's (1979) thesis that a Modern Capitalist World System overrides smaller systems in today's global village. But Wallerstein's mentor, F. Braudel, opposes the concept of a completely hegemonic world system because he finds the constant re-localization of activity integral with cycles and waves of economic change. In these postulates, we again encounter a metaphorical rapport between various forms of human activity and organization within an evolving environment, what Vernadskiy refers to as the Noosphere. Gumilev, however, safely remains within a
historical geography, avoiding the dangers of speculating on the implications of such evolutionary phenomena in the modern world.

Continuing to discuss the particular epoch of Western European ethnogenesis, Gumilev finds that following the original 9th century burst, by the 13th century all of Western Europe was seized by a powerful process of formation of ethnoses as well as an upsurge of culture and statehood. These processes marched in parallel, in constant interaction. The number of medieval ethnoses first increased . . . [then gradually decreased]. It was only the coming of capitalism that enabled Paris to consolidate its hold over the South [and its diverse ethnic fragments], as the young men flocked to the capital to earn a living and young women hired themselves out as housemaids. On their return home, they passed on newly assimilated behavioral patterns to their children; the rest was accomplished by the schools in the 19th century and by the radio in the 20th (1973d:601).

Here, Gumilev acknowledges this reciprocal play between the technosphere and sociosphere, and its effects on ethnos as the natural form of human social organization. It is necessary to link the two terms, ethnos and social organization in order to discuss human ethnology from a natural science standpoint. As ethologists use the term "social organization" to label the herds, flocks, schools of other species, so despite the Marxist language, and an understandable difference between ethnos and "social forms of motion of matter," ethnos corresponds to a H. sapiens form of social organization. Having earlier encountered this problem in Gumilev's writing, I must stress that irrespective of Soviet terminology, other species, not only primates and mammals, do have recognizable forms of social organization, as E.O. Wilson (1978), among others, has shown with ants and other lower animals.

Gumilev has stated that the behavioral pattern, which we can assume here to be the same as a behavioral stereotype, can be picked up by immigrants of a differing ethnos, carried back to their ethno-core and transmitted to offspring, thus transforming that smaller ethno unit from its independent set of traditions into a variant of the dominant ethnos. Again, it is not so much
a burst of ethnogenic energy here that activates the transformation, as a cultural transmission occurring in response to a change in the social structure and level of technology. But, could this complex interaction have occurred within earlier transformations of ethnic genesis and decline. It is difficult to answer the question of cultural transmission from the sketchy historical data in the Landscape and Ethnos series. Even so, in an ethnosphere which includes its domesticates and material artifacts (the technosphere) the interaction between natural and social elements must have always been involved in setting the conditions within which energetic impulses triggered bursts of innate ethnic drive, their "passionarnost."

Here, we need to take a look at the denotative meaning of the terms used in translating the Russian "Passionarnost" into "innate ethnic drive." The etymological implications of "passion," are derived from the Latin "patior, pass- suffer," which stems from the Greek "pati" -- to endure, to harm, as in pathos or destruction. The past participle of the Latin is "passio" -- suffering; ... any kind of feeling or emotion ... of compelling force," (Oxford English Dictionary; Oxford Dictionary of Etymology, 1966; American College Dictionary, Random House, 1961). In Russian, "nost" pertains to anything in general, (i.e., a suffix like the Eng. "-ness"), and when combined with "passion" this coinage can be interpreted as "empassioned." When applied to individuals of strong emotional character, it implies a compelling force of which can do harm to self or others. If acting or displaying such strong emotion involves risk, the potential to "sacrifice ... the surrender, or giving up, or taking of, something prized or precious," assumes risk to one's own life. Whether the risk is taken on in battle or in public forum, or in martyrdom, it involves more than just a willingness to passively destroy the self, there must exist be a strong resolve, a passion. In Shabad's translation, "innate drive,"
or an active "inborn" characteristic, might be more effectively interpreted as "intensity," which has in fact been suggested by Wagner in his reading of Gumilev (personal communication).

Within any population there will be an attraction between individuals who have a greater capacity to resist natural and social stresss, especially those that could destroy or subjugate their co-related population. These individuals are also inclined towards activity that absorbs energy and thus are able to both actively resist stress and to engage in aggressive or hyper-energetic behavior. Under appropriate natural circumstances and social situations, these individuals can become either leaders of their people, trouble-makers, or explorers. Therefore, these intense individuals reflect a concentration of available emotional energy within a small proportion of any specific population, and exhibit an as yet unknown pattern of spatial and temporal distribution within that population.

I do not believe that Gumilev is talking about any supermen, or attributing any virtue to those individuals, but rather presents an argument for a random biological capacity to absorb and expend greater amounts of energy, and which generally results in being self-destructive for individuals so endowed. The stance that Gumilev has taken regarding innate drive contrasts it with acquired characteristics, or the capacity of any individual to "rise to the occasion," with singular acts of bravery or sacrifice, despite his or her previous lack of passionate displays. As is evident here, and throughout the literature, the nature-nurture controversy in ontogeny remains a battleground within all disciplines concerning themselves with the human subject. Gumilev claims that this innate ethnic drive is neither genotypic nor phenotypic, but rather inherited through a signal transmission of a behavioral stereotype, labeled as tradition. This transmission is inherently related to an
environment, if, that is, we accept the premise that ethnos can be understood as a natural factor in its encompassing landscape, which it has shaped out of its responses to its total environment. His proposed model of the human role in natural history does not clash head on with "the question of the extent to which the consummatory act is innate or learned," as Schilcher and Tennant (1984:54) phrase this aspect of the debate. They define this consummatory act as "a sequence of movements which are performed 'en-block' in bringing the instinctual behavioral pattern to a close." But in determining how much human behavior depends on drives . . . the critical test is to determine whether an action pattern is inborn is not its stereotyped nature but rather whether it is maintained before it could possibly have been learned. . . . [Moreover], in discussing instinct we are no longer enquiring after phenotypic differences, but rather after the significance of genetic and environmental factors in individual development of certain behavior patterns. . . [although], no trait is wholly determined ontogenetically by only one of these two factors. . . [as] most forms of complex behavior on the part of higher animals contain both innate and learned components inextricably interlocked (1984:54-55).

Their conclusions on this matter come to rest on "recourse to a trait's universality as an indicator of innateness," a concept derived from Eibl-Eibesfeldt's (1973) studies and a dual track of 'heritability,' which are elegantly brought together in the concept of the reaction norm of a genotype. Each individual is capable of a certain range of phenotypic reactions to varying environmental stimuli. The size of this range will vary from trait to trait . . . in a stable environment we could expect variability to be very low, and to be attributable to recurring mutations adversely affecting fitness. In constant conditions evolution would taper off and come to a standstill [an example of a relic ethnos?]. A phenotype [or ethnic stereotype] that is optimal in such conditions would swell its representation within the whole population. Moreover, the frequency of mutations, which can also be subject to evolution, would decline, as would the rate of recombination involving the governing stereotype (1984:39-40).

As the human organism is quite adaptable to varying environments, although not insensitive to environmental changes, part of that adaptive characteristic lies in the long dependency-learning process of the species'
extended infantile period. During this prolonged infancy and childhood, a repertoire of behavioral displays and action must be acquired, or as some regard, selected out from an even greater range of possible behaviors. If, in this process of cultural transmission, an innate drive for hyperactivity, or passion is not genotypically inherited, it must be transmitted to the offspring during "socialization" and "acculturation." If, however, as Schilcher and Tennant (1984:40-41) state, the human bio-programme is an open one, then closed programmes will lead to individual differences being genetically determined and open programmes to their being environmentally determined. [While] theoretically possible that open programmes can lead to genetically determined differences . . . it is highly unlikely that so much genetic response as is required for the formation of a closed programme would have been forthcoming had not the environment frequently presented the organisms with stimuli required to trigger the programme, thereby excluding much non-adaptive environmental variability due to spontaneous activity of the nervous system.

The foregoing premises would seem to favor an environmental basis for the acquisition of highly adaptive, human behavioral characteristics. But the authors warn of neglecting the genetic considerations that enter at every level of life, including the psychological and social level. . . [as] genetic variation is omnipresent at the level of proteins and this variability must have tangible effects at successively higher levels of morphology and behavior. . . [In fact] the overwhelming majority of quantitative genetic analyses of cognitive and personality traits attest to considerable heritability or genetic variation in such traits . . . [moreover] it is not primarily the alleles investigated by population geneticists that are responsible for the heritability of behavior or other complex traits. It is exactly these rare alleles that make for family resemblance and interfamilial variation. With mutation frequencies in the range of 10^-5 to 10^-6 and a number of genes per individual in the same range, practically every individual carries some rare mutation peculiar to him alone. Furthermore, every individual inherits from his parents rare alleles particular to them, which makes him resemble them more than any other member of the species. Many of these 'very rare' alleles are not selectively neutral . . . giving rise to traits which are in all likelihood not neutral -- such as personality traits, which quite obviously affect fitness (1984:41-42).

Here we encounter a contradiction to some of Gumilev's assumptions about the non-genetic basis of ethnic transmission. But in their review of
current thinking on this subject, Schilcher and Tennant (1984) are writing some
ten years later than Gumilev, an eon in scientific research time. Moreover,
they are unconstrained by ideological boundaries, and in fact consider as wide
a range of scientific viewpoint as one could hope for in such a review. They
do confirm, however, the complex transmission of behavioral traits such as
Gumilev proposes as ethnic drive. They also find evidence for a higher mutage-
nic frequency and potential within individuals and small groups than is gener-
ally treated by population genetecists who survey extremely large populations.
Their findings, therefore, accord with Gumilev's notion of ethnogenic "bursts"
as mutagenic events. Moreover, they report findings that support the environ-
mental factors considered so important by Gumilev in his theory of ethnogene-
sis, especially in terms of its significance in adaptive behavior on the part
of humans whose behavioral mechanisms in many aspects represent "open programs"
that are highly susceptible to and interactive with environmental stimuli.
Thus, as Schilcher and Tennant state, "the more universal a trait is across
different cultures, the greater . . . is the probability that it is inborn."
Correspondingly, Gumilev has observed that the trait of energetic activity
patterned into distinct rhythms among ethnic groups and mutagenic bursts giving
rise to distinct ethnogenic formations and corresponding sets of behavioral
stereotypes, have a universality which would tend to indicate it as an inborn
trait. While this issue has continued to be a problem for Gumilev, it now
seems resolvable when treated in relationship to current theories of evolutio-
nary biology.

In another issue which Gumilev has insufficiently dealt with, the
counter currents within an energized population of whatever size must be consi-
dered. The aspect of struggle and conflict in any given population involves a
number of energized individuals who could readily play a diversity of roles in
either maintaining or challenging the existing social order, or, in either
case, creating a focus around which others might gravitate. But such a focus
would not necessarily exist, as the "loner" anti-social or asocial individual
might likewise be energy endowed. Certainly the saint going out to the desert
differs little in such energy potential from the one who walks out to face the
lion. What constitutes an ethnogenic "trigger" is probably more than a single
ontogenic experience within a population, being rather the emergence through
both social and natural selection of a set of energy endowed individuals with
"the right stuff," or the appropriate repertoire of displays relevant to the
situation. The nature of an ethnos is therefore a complementary aggregation of
such individuals who take the lead in adaptive behavior for a proportion of the
population within a particular encompassing landscape. Non-complementary or
irrelevant behavior on the part of any such aggregate of individuals would not
produce "leadership" but rather destructive internal competition. The results
of such competition may in certain circumstances allow a single energized set,
one or more individuals, to emerge into a relevant leadership role, thus poten-
tially creating a core ethnos. But, as in Gumilev's model, a host of both
internal and external factors constantly exist as destroyers of the ambitions
or potential inherent in such energized core groups. The successful ethnogene-
sis is truly a unique natural experience in the biosphere. Implicit in
Gumilev's discussion of specific shifting, regional ethnogenic epochs is a
structure of history based on an ethnological principle rather than a purely
natural or social one. He points to two more such epochs. The first of these
epochs is

an energetic surge in 12th century Mongolia and Manchuria [in which]
its products were the Jurchen . . . and the Mongols . . . [and] this
visable surge was preceded by an incubation that took up the second
half of the 11th century (1973d:602).
The second such epoch was found, in that

the same kind of surge burst forth in the 14th century in Eastern Europe, giving rise simultaneously to the Lithuanian -- Russian, Great Russian and Tatar Turkic-speaking ethnoses. South of the Black Sea, within the same meridional belt, we find the beginnings of the Ottoman Turks, the Sunnites as well as the Azerbaydzhan Turks, who became unified under the Shiite banner (1973:602).

Here, Gumiłev reminds us that religion may be one of the bases on which an new ethnos may be founded, certainly an important point for my use of the ethnogenic hypothesis to construct a model of the Muslim superethnos. I would thus conclude that many forms of human activity can be at the foundation of such ethnic triggering outbursts, even though as part of the theory we must still cling to the belief in an actual energetic impulse from the biosphere as the necessary ethnogenic triggering device.

Gumiłev states that "the number of illustrations of bursts of ethnic energy is far from complete" but that "additional examples would merely fall into the same pattern." He therefore makes the following conclusions:

1. From time to time, populations endowed with an innate energy in various segments of the earth's surface, forming consortiums that either turn into ethnoses or perish.
2. A single burst of energy may give rise to several superethnic formations.
3. Regions encompassed by superethnoses may be broken up by terrestrial barriers that rule out any population-genetic exchange or cultural-historical influences, and yet the area covered by the energetic surge is monolithic.
4. The innate ethnic drive is a characteristic, in the biological sense, that gives substance to historicl processes. The course of these processes is determined by the social form of motion of matter, and the constant correlation displayed by these processes is the subject of historical geography and ethnic history (1973:602).

Admitting that "the only explanation of these mysterious displays of ethnic energy" lies in a hypothesis, "whereas the foregoing constitutes an empirical generalization comparable in reliability to observed fact," Gumiłev has concluded a most significant exploration of a wide range of ethnogenic occurrences.

The third point above, however, represents what is most novel in this
formulation of ethnologic theory. It is this regionalization of ethnogenic
epochs that produces the basis for a more general historical geography, which
it will necessarily require work in many regions and historical periods to
refine. The basis for correlating regionalization to a periodization is the
next problem to be attacked by Gumilev in confronting the larger problem of the
internal regularity of ethnos and ethnogenic processes within the broad histori-
cal landscape.
CHAPTER XVI
ON THE INTERNAL REGULARITY OF ETHNOGENESIS

The editor of Soviet Geography, I. Shabad introduces Gumilev’s last Landscape and Ethnos article with a terse summary of the series. He succinctly states the core argument as follows:

"After having discussed . . . the relationship between shifts in storm tracks and the fortunes of the steppe peoples of Eurasia, Gumilev developed a theory that attributes the rise, development and decline of an ethnus to the inertial burst and gradual waning . . . [of] superethnic systems that are identifiable with major cultural areas through time and through space . . . [and] attempt[s] to relate the different phases in the evolution of an ethnus to changing relationships between the group and the individual, as expressed in a series of imperatives (1973e:653).

In Gumilev’s own introduction to the article, he takes on his critics, and in so doing, appropriates Kozlov’s (1971) labeling of his concepts as “geographic-psychologic.” In approving of that term for his work, Gumilev also finds that an unnamed reviewer (Voprosy filosofii, 1971:1:158) has correctly understood . . . the point of the concept: to identify the relationship between the rigorous logic of events in human society and the history of the biosphere of our planet, and to supplement the sociologic aspect by the ethnologic (1973e:652).

Taking a materialist position, Gumilev sets out his frame of reference by defining psychology as “the physiology of nervous activity manifest in human behavior,” and “ethnopsychology” as being concerned with “the supra-individual behavior of human communities known as ethnoses.” As such, a geographic
ethno-psychology conforms to all the natural forms of motion of matter (biological, physical, mechanical and chemical) which

affect individual persons and ethnoses, but when it comes to human society as a whole, they can never achieve a predominant role in generating spontaneous progressive development (1973e:652).

Therefore, as nature and society are not equated in (Marxist) geography, so

it is senseless in ethnology to reduce the great diversity of phenomena of ethnogenesis solely to social . . . or biological regularities, while ignoring the equally important biochemical and biophysical processes in the biosphere [cf. chapt. xiv] (1973e:652).

Again he continues to emphasize the importance of avoiding reductivist or determinist tendencies towards either a natural or social direction. There should be "no doubt," however, about the presence of biological impulses in human behavior," a fact recognized by as most contemporary researchers, whether Soviet or American. In Gumilev's (1973e:652) view, his task as has been
to determine the role of biological impulses in ethnogenesis; a problem complicated by the need for investigating different ethnogeneses diachronically [so as] to identify those aspects that are similar, and not only externally, but in their role and place in the process.

Having established the objective, Gumilev now finds that in order to "compare identical phases in ethnogenesis" he has had to carry out his investigations on two planes, the historical-geographic and comparative ethnographic. But it remains necessary to support the theory and method established on those planes by adding evidence in the form of empirical generalizations drawn from a third plane, that of "socio-historical explanation." To provide a context for this third plane of research, Gumilev reviews the terminology used, and the results of his studies up to this point. In so doing, he returns to an issue crucial to the coherence of his overall work, the manner in which ethnos is perceived to exist as an actual phenomenon, stating that it is perceived through our senses (and not through our consciousness or self-awareness), [and] is embodied in the forms of social institutions, and is
defined, in each particular case, through a set of indicators, such as language, tradition, religion, material culture... (1973e:652).

He then contrasts ethnic development as a discreet phenomenon with social evolution, which is spontaneous and represents a different form of motion. These two planes, however, intersect within the sense phenomena of ethnic behavior and communications, and involves a transformations of energy that gives rise to ethnogenesis, which Gumilev can now redefine as

an inertial process in which the initial charge of energy [cf., p.263 for Vernadskiy's description] is spent as a result of resistance offered by the outside environment. This leads to either an ethnic equilibrium with the landscape and human environment, i.e. reduction to a relic, or to disintegration of the ethnic unit as its members become incorporated into other ethnoses (1973e:652).

In confronting the intersection of energies embodied in individuals aggregated at the level of an ethnos, Gumilev has proposed a method that leads away from the social determinist approach dominating both "Western" and Soviet views of ethnos, i.e., as a process of conscious self-awareness and affiliation. His approach represents a welcome turn towards a natural history of human behavior and bio-social organization. Nevertheless, he states that even though ethnos is a natural process, it is "observable only in given social forms." And yet, as he puts it, "Ever since neanthropus made his appearance" this co-evolution has, followed a regular life-cycle pattern (birth, expansion, decay, disintegration or homeostatic transformation). It thus represents "the typical inertial process of a system that exchanges information and entropy with its surroundings." The difference between these two "correlated processes" (the social form of motion of matter and ethnogenesis), has, however, been implicit in a variety of social institutions. Here, Gumilev leaves the door open to a closer relation, if not erasure of distinctions, between the two processes, as he refers to social institutions as only implied, or "suggestive" of a difference. Therefore, given sufficient scientific evidence and
opportunity for expression, it is conceivable that this theory could lead to an understanding of consciousness as a synergistic aspect of natural phenomena embodied in the biological individual, as indeed current scientific models of the brain suggest. Such a discovery could open up a new level of ethnology in which biorhythms, non-verbal communications, ethology, sociobiology, and biogenetic structuralism, could constitute a new methodological synthesis.

Next, Gumilev addresses the geographic distribution of ethnogenensis. According to his research, not all landscapes produce the necessary energetic qualities or quantities to engender an ethnogenic burst within their human populations. As he puts it, "ethnogenesis is not a ubiquitous process." In fact, areas of what he terms "dampened ethnogeneses" experience relatively low levels of energetic phenomena which result in only slight rises of the ethnogenic curve of a particular landscape. This "dampened ethnogeneses" results in relic ethnoses, which, if sufficiently isolated, may exist indefinitely because their systems are endowed with so little energy as to assume a steady state (1973:653).

Gumilev has so far not pushed this issue, nor developed concrete examples of relic or persistent ethnogenesis comparable to his discussion of its dynamic form. One example, however briefly mentioned, of a static state situation is New Guinea, represented by Gumilev as a relatively isolated island on which a great number of small local ethnoses evolved in still more relatively isolated pockets. Adapting to their slowly changing landscapes over long periods of time, these ethnoses produced more or less homeostatic human ecosystems, or in Gumilev's terms, relic ethnoses. He also mentions Tierra del Fuego and Tasmania as places where such conditions pertain, thus inhibiting ethnogenesis.

Turning to the next point of why some regions have a dynamic history of ethnogenesis and others do not, Gumilev explained it in terms of an energetic theory of energy distribution. That is, natural environmental conditions
either stimulated or retarded the energetic potential available for populations of different landscapes. For example, the Eurasian steppe, a region historically productive of many natural ethnogenic bursts, has been reduced to a series of relic ethnoses by the socio-technical developments of a modern world system. In fact, the arrival of the repeater rifle, machine gun, motor vehicles, trains and the airplane, spelled the doom of major ethnogenic outbursts from steppe nomads. Their internecine warfare in response to natural conditions has now come under control by large scale modern state systems, equipped with rapid-deployment weaponry, standing armies, and advanced communications. Such state formations were able to bring productive technology into the environment, creating a sustainable economy of mixed mineral extraction, forestry, agriculture, processing and manufacturing industries and a rationalized livestock raising system. As a result, socio-technical impacts on the landscape have changed to the point where an ethnos' naturally acquired, and adaptive, behavioral stereotypes must integrate and transform socially acquired characteristics into economically, socially and ecologically relevant activities. Such activities, and the aforementioned military and administrative vehicles for state control, preclude the kind of energetic and ethnogenic eruptions that could, as in earlier epochs, trigger brief aggregations into large ethnic formations able to expand rapidly by horseback into vast distances and attack the agrarian steppe margins, wreaking havoc on both Eastern and Western civilizations. Thus ends a historical epoch.

On The Processual Structure of Ethnogenesis

Before discussing the sequential development of ethnogenic process, Gumilev concludes his discussion of the spatial distribution of energy by comparing it to the distribution of energy within an ethnic aggregate, finding
that the differences are minimal, as

most members of developing ethnoses are endowed with as little drive as those in relic ethnoses. The difference is that dynamic systems also include energetic members who contribute their excess energy to the development of the system (1973e:653).

While possibly suggestive of personal excess being the source of formative energy, implicit here is the idea that individuals are transceivers of that energy as it emerges from a biocenosis involving specific landscapes, populations, and conditions. When distributed, however, the amount of energy involved leaves an uneven surface, with a few concentrations. Individuals within those energetic clusters are the ones who make a difference to their respective populations or ethnoses. Such distribution results in

dynamic systems [that] also include energetic members who contribute their excess energy to the development of the system ... [thus] if we were to take the static state as zero, then dynamic states would merely represent local disturbances (1973e:653).

Here again I find a problem in the proposed source of that energy, as Gumilev gives no hint as to how it could be measured. Nevertheless, he recapitulates the four-stage construct of ethnogenesis, and now takes into consideration the overall affect of distributional differences in energy concentration. Gumilev, however, has assumed the reader's familiarity with the terminology when discussing the differences between inertia (rest) and inertial energy. Of primary concern is latter, defined as, "a property by which matter continues in its existing state of rest or uniform motion in a straight line unless that state is changed by external force," (Oxford Dictionary, 5th ed. 1969).

Here, the four stages are defined. First, ethnic quietude represents inertia, "a stable state in which each generation repeats the life-cycle of the preceding generation, usually under conditions of isolation." Second comes the triggering stage of transforming "the inertia of an initial burst of energy," depicted as a steep rise in the curve plotted to represent the energy-over-time
model of ethnogenesis. In the third stage, previously acquired inertia (energy) is lost over time to the environment by exchanging energy for entropy, and shown as the long declining slope of the curve (fig. 12). In the fourth and last stage to appear, the ethnos returns to ethnic quiescence. To conclude, Gumilev (1973e:653) defines this sequence as a whole, stating that:

this process is expressed in a regular, monotonic succession of dominant psycho-nervous conditions that are superimposed on the zero level corresponding to the static state . . . [which] also happens to be the pattern of ethnogenesis in its visible behaviorist form.

The next step in Gumilev's ethnogenetic model describes a method for interpreting it. First, he proposes that this inertial drive represents "the only form of energy affecting the behavior of human communities," but, as we have seen earlier, not for individuals. This is a difficult proposition to argue from the standpoint of human ecology, as in order for the various exchanges of energy between the human being and its environment to occur, and result in energy attained in the form of food, individuals would have to aggregate cooperatively in interactive social units. But does this biocenosis, whereby the human community exchanges its energy of activity for energy of nutrition to fuel the body, also require it to acquire natural resources to fuel its technological sphere. That is, do socially organized individuals, who engage in cooperative effort to obtain energy, or resources, play a subconscious role in the exchange of energy with other systems. While treated in a rather circular discussion, this process may not in Gumilev's view constitute a specifically "human community" acquisition and expenditure of energy. As such, this acquiring and expending process would reduce the proposition to relying only on ethnogenetic drive as an energy specifically affecting the community's behavior. This energy-entropy exchange process would then work exclusively through that initial straight-line jolt, thus disturbing
the inertial quietude, marking the appearance of a generation that
includes a certain number of individuals endowed with drive. By the
very fact of their existence, they tend to disturb the established
order because they are driven by a purpose and cannot content them-
selves with everyday concerns (1973e:653).

One problem continues to undercut this proposition, the implication of a "great
men" hypothesis. The factor of chaisma or individual endowment will always
surface, whether from an idealist or materialist stance, because of the unequal
biological and social character of individuals within any population. When
historical circumstances arise that challenge individuals, no two will react
exactly the same, likewise with populations. But if I read Gumilev correctly,
we are dealing here with a random number of individuals within any population
that have a greater energetic potential (intensity of being), which leads
either to internal conflict within the group or erratic behavior, unless inter-
secting with historical circumstances to acquire socially purposeful behavior.
Hence, when circumstances give purpose, the formation of a convivium may occur,
and given the relative proportion of such intense individuals within any popu-
lation the ethnogenic process may be sufficiently triggered to impel its evolu-
tion along a regular path, as modified by the sum total of its circumstances.

Gumilev's preceding statement implied a teleological cause, or purpo-
seful behavior inherent in an ethnosystem. But what is this purpose, where
does it come from and how is it manifested in a natural, subconscious level of
the community psychological behavior. Reviewing Gumilev's (1973e:653) discus-
sion of those energized individuals, might suggest some partial answers, thus, as

the need for counteracting the environment induces them [sic. passio-
nates] to unite and act in concord; this gives rise to the first
consortium, which rapidly acquires social forms corresponding to the
level of social development of the particular historical period.

The grand mystery! Some internal transformation occurs within a few indivi-
duals whose psycho-nervous systems are energized through "refracting" surplus
energies arising from some distinctive, but unidentified, environmental source. Correspondingly, they react to a presumably subconscious "need" to counteract a particular set of conditions occurring in their specific environments. But, at any given time, these specific conditions occur in only a few places in the biosphere, and no temporal regularity can be identified, as they do not constantly occur in any recognizable pattern (although much of Gumilev's effort is aimed at discovering regularity in these processes).

In the stage of development following an initial set of energized individuals arising from the environment, they tend to be somewhat unexplainably draw together. This cohesive process induces them to collective action in the face of a mutually perceived environmental challenge. Then, as a consortium, and thus acquiring social institutions, they will tend towards a more systemic set of relationships. As Gumilev states,

under a favorable combination of circumstances, the activity stirred by ethnic drive will put that consortium into an optimal position, fostering an increase in membership through intensive reproduction. This gives rise to an ethnogenesis as a system in which a subordination of individuals is a condition for its existence (1973e:653).

What occurs under most circumstances is that the consortium will not encounter sufficiently favorable opportunities for further development. This rupture of the development process does not allow them to reach the stage where a dynamic increase in their population can occur to boost them into the next systematic phase. But one key idea, which will play a role within the next level of the model, arises from the necessity for some force to subordinate individuals to the collective benefit. Not every consortium reaches this stage, and even those that do face further constraints in that the process works analogously to natural selection, however,

the same ethnic energy also drives people to mutual extermination for the sake of predominance within the system, and the level of energy then begins to decline until it reaches zero. [Nevertheless] the
inertia embodied in social institutions and traditions may still preserve the existence of the system, but it is basically doomed and gradually passes into a homeostatic state (1973e:653).

Even those consortia that have survived the transition to ethnos may then burn themselves out through an involution of their drive. Only where the conflict among energized individuals for dominance is quickly resolved, and organized in social forms that can then be turned against the external environment and surrounding populations, can the fledgling ethnoses survive. But even then, the possibility that they will suffer excessive losses in their externalized aggression and expansion ensures that again more will fail than succeed in establishing a relatively large scale, powerful and stable ethno-territorial system, or superethnos. Therefore, at each level of this process the results of failure can reduce the remnants of an energized ethnic unit to a relic state, and even those that do not become re-absorbed into newly emerging ethnoses tend to survive at that level because their accumulated institutions and traditions enable a minimal subsistence within their territorial core. One interesting point, however, about a developing collectivity is the capacity for sacrifice implicit in "passionarnost," as Gumilev states:

ethnic drive does not decline only in time of war. That could be easily explained by the death of individuals who sacrifice their lives too actively on behalf of the community. It so happens that ethnic energy is also likely to decline in time of peace, and in fact more rapidly than in harsh times (1973e:653-54).

Gumilev explains this seeming paradox of decline in both war and peace in terms which still do not account for a peaceful decline. In fact, his proposed cause for a peace-time decline of that energy, actually involves a defensive role for the peaceful ethnoses in the face of attacks by more dynamic ethnogenetic expansion. As he states this concept (1973e:654),

the most terrible fate for an ethnus is to be roused from a quiescent existence to defence against an attacking ethnus; if the defending ethnus does not perish as a result, it will inevitably undergo a
break, which is never painless. Such a phenomenon cannot be explained in terms of social causes of factors; but if we view enhanced ethnic drive as an inherited characteristic, it becomes clear.

Paradoxically, as a people must be aroused in order to defend their quietesence, and having undergone the trauma of war can never return to the pre-existing state, this very defence ruptures past traditions and patterns of behavioral stereotypes, or lifestyles. Then too, while the example used by Gumilev in constructing a rationale for an ethnos to decline, hardly seems one of peacetime, the crucial issue here seems to be the effect on reproductive selection and inherited qualities. He presents a rather problematic justification for a reproductive aspect of ethnic decline, claiming that reproducing females within a group may express their preferences for males as mating partners in producing offspring. Again, questions arise over intentionality versus subconscious psychological motivations. But, in Gumilev's words,

At the time of the feudal wars, women tended to favor heroes who were off to battle, so that these, before dying, succeeded in leaving offspring, even if not always through legitimate marriages. The children grew up and continued to perform deeds in keeping with their constitution without having known their fathers. On the other hand, in quiet times, it was the moderate and orderly family man who became the ideal, while those endowed with surplus energy could not find a place in life . . . The energy-endowed people, who were not needed and sometimes even represented a nuisance for society, died without leaving offspring. Their disappearance went virtually unnoticed as long as the ethnos was not shaken by external blows, but when this happened, the loss could not be made up. The ethnos entered a phase of obscuration, i.e. agony (1973e:654).

I am not sure whether contemporary feminist scholars, involved in a revisionist project against male dominated history and social theory, would accept this premise, even though it seemingly places reproductive power in the hands of the women of any ethnos. Here, Gumilev enters the sociology of deviance as much as the ethnology of natural history. In this latter approach, any primate population would have dominant males whose surface characteristics would supposedly be mechanically perceived by females as desirable for
reproducing offspring. But some question exists as to whether those females have any choice, or are they "hard-wired" to accept only males with certain recognizable characteristics. Questions also arise as to what subconscious mechanisms in H. sapiens, attract males to certain females and vice versa. On the one side, some social scientists favor an explanation that proposes social conditioning toward certain external attributes, dress, posture, and other display codes, as the motivational basis for attraction. Also under the conditions of most historical societies, the reproductive female has been treated as reproductive capital, hence property of her family, clan, tribe, etc., and thus controlled by various cultural codes in both her reproductive choice and opportunities for sexual activity.

Under the current Westernizing norms and technology of reproductive control, females have greater choice in both sexual interaction, and in risking conception. This creates a new situation in which opportunities for sexual interaction are increased by relaxed norms of male-female contact, and by more personal space coupled with greater public space in the predominantly urban world, where anonymity can be maintained. Given these conditions, a female may select male sexual partners with relative freedom of choice, and by using birth control devices avoid pregnancy. Therefore, under present circumstances, the female would seem to control reproductive choice more than ever before.

Despite the social conditioning approach which proposes that females are still dominated by the propaganda and values imposed through norms in any contemporary society, there are assumptions of intentional choice, and the entire scenario is posited on the basis of the ever mysterious, conscious mind. Alternatively, more research into the biological basis of social interaction opens up possibilities that sexual mate selection operates on less superficial social characteristics. Beyond such superficial marketing ploys as adding
pheremones to scented oils, supposedly to attract the opposite sex at those levels, olfactory response must operate on some levels to communicate. In fact, one can construct an argument that proposes more natural, biologically based mechanisms involved in choice for sexual partners, especially as the social control barriers over female mobility are reduced. In this manner, the senses, when given more or less free reign, will operate in less socially constrained behavior to favor a more natural selection according to more subconsciously encoded preferences.

Given Gumilev's theory, that females (or at least certain females) tend to select the more energetic, adventurous males for reproductive mating during times of stress and conflict, is this current epoch a time in which social chaos overcomes the existing traditions that constrain sexual behavior. Then, if this is the case, are families more, or less, able to dominate their reproductive females, protect them, and dictate their behavior and possibilities for contact with other males. Also, might not females under less social constraint tend to operate under more natural conditions of mate selection, and thus choose the warrior. Though questioning value judgements and raising more problems than answers, these issues have to be addressed.

Whether one tends towards the sociological or the biological mode of analysis, the fact remains that at this point we cannot ignore the male-focus of Gumilev's theory. He has not talked about energized females, but implicitly about a male world in which energy is transformed into collective action involving conflict and expansion. How to account for natural energetic processes occurring only in certain locations at particular historical periods and affecting only a few specific individuals, remains a fundamental problem. The complexity of that problem is increased, however, by the question of gender, and the ratio of male to female passions. Does Gumilev assume that the majority
of these energy-endowed individuals are male, and if so, why. Again, regarding the apparent deviant behavior of energized males during peacetime, and their consequent rejection by both the general population of the ethnos and in particular by reproductive females, how do we account for bandits, street gangs, police, duellists, poets, rock and roll stars, professional sportsmen or gladiators, and their respective female admirers.

I cannot completely agree with Gumilev on the point of reproductive selection differing in times of peace or war, for too many anomalies exist, not the least of which are the historical phenomenon of prostitutes, camp followers, rape and other sexually reproductive activities normal in time of war. Again in peace time, any number of opportunities for sexual reproduction will be available to energy-endowed males, irrespective of their social stigma, thus it is highly doubtful that they would have gone entirely unnoticed, nor have died without offspring. Finally, the implications of a male-only energy raises too many unanswered questions. While recognizing that, in Gumilev's construct, the inheritance process (signal heredity) is neither genotypic nor phenotypic, but rather involves the transmission of behavioral models in the form of ethno-rhythms, and concerns biological rather than social populations, the mechanisms for transmission and specific qualities of these interactional rhythms remain inadequately discussed.

Population Biology as Cause: A Comparison

In order to make this model more effective, the previously discussed discrepancies must be cleared up through modifications that introduce more specific refinements in these problematic areas. Having already touched upon the theories of interactional rhythm which should be extremely helpful in filling in some of the mechanical problems of recognition, resonance,
behavioral stereotype and ethnorhythm, a more specific proposition will be introduced later with sufficient reference to results from empirical research to support Gumilev's theory of ethnorhythm. In terms of inheritance and transmission, Gumilev's socio-historical model intersects in places with Colinvaux's (1980) attempt to apply his ecological principles of niche selection to a social history. Approaching the problem of social rhythms, Colinvaux (1980: 188-189) finds highly doubtful the ecological explanations for successive waves of steppe migrations and conquests based solely on shifting climatic factors. Moving the doubtful climatic data to a secondary level, he focuses on "cycles that do make sense if human breeding habits are behind them" (1980:191).

In a rather questionable analogy to lemmings, Colinvaux proposes that steppe nomads raise a large brood of offspring because of a lack of social constraints, but the environment can only carry a certain limit, therefore a "chronic shortage of niche spaces" would have led to "ways of allocating niche spaces to some and denying them to others" (1980:199). He proposes that competition must cull the young and thin out the population before it reaches adult ranks because the feeding to adulthood of too many adolescents would have overburdened the available food resources. Also, favorable climate and forage conditions could lead to a quantitative buildup of population, and followed by a shift towards less optimal conditions, result in an overpopulation and increased fighting which would spill outwards once a hierarchical structure forms under a dominant captain. Colinvaux explains this process as follows:

population cycles of steppe peoples . . . are thus synchronized by weather, although they are definitely not caused by cycles in climate [as] people use weather for behavior . . . yet the climatic pattern for good years and bad is purely random . . . [then] the surplus must die or fail to breed . . . surplus nomads are spent as they follow their great captain in his armies to pitch their tents in borderlands once held by civilized states. The steppes are relieved of their surplus people and nomadism there may revert to its traditional ways. [thus] Fighting is no longer so necessary to the stay at homes and
the martial needs which made them submit to the triumphant discipline of their generals can be relaxed. This explains the ebb tide of nomad conquests. In the conquered territories the soldiers' families fade away, as their nomad traditions do not equip them to breed well in the circumstances of a frontier state; or else they become settlers themselves (1980:202).

Colinvaux's descriptive model operates on ecological premises, but like Gumilev, he applies natural principles to an interpretation of historical events. Similarly, he focuses on the fate of "nations." But while his premises of operational causation are more straightforward than Gumilev's, he lacks a taxonomic structure for classifying populations into nations as distinct units, thereby overgeneralizing and having to repeat his model with variation, in a case by case exploration. Aside from viewing a contemporary convergence towards more appropriately biosocial explanations of human behavior that includes Colinvaux with Gumilev, the most interesting aspect of Colinvaux's niche specialization theory in relation to Gumilev's ethnogenic theory is that they both posit an environmental source for the triggering energetic phenomenon. But, for Colinvaux, (1980:22) it is a direct biocenosis, that makes actual food energy available for the human population, and can be transformed into nourishment, as "resources determine breeding success."

Tackling the problem of behavioral characteristics of populations, which would be strengthened if given a hierarchical taxonomic structure like Gumilev's ethnoses, Colinvaux combines niche with breeding strategy to end up with a quantitative explanation for the same historical events for which Gumilev provides a qualitative theory. Colinvaux defines an ecological niche as "all the things about a kind of animal that let it live: its way of feeding, what it does to avoid enemies, how it is fitted to the place in which it must dwell," Colinvaux might well be describing the behavioral stereotype proposed by Gumilev. The second principle in Colinvaux's model, "breeding strategy," is
defined as "all the things the species does to turn resources into babies."

When these two aspects of human reproductive behavior are combined we find that "because of its special niche an animal can survive and win food. Through its breeding strategy, it turns much of its food into babies" (1980:25-26). From this basic proposition Colinvaux interprets all human history by niche selection and transmission of clutch size from one generation to the next, constrained or stimulated by availability of environmental resources, eg., energy primarily in the form of food, but inclusive of cultural necessities. While similar in some respects to Gumilev's theories of historical geography, Colinvaux seems much more reductivist in comparison.

In comparing Colinvaux's approach to that of Gumilev, the best analogy would be that Colinvaux seeks an answer to the birth and expansion of nations in simple, quantitative aspects of reproduction, whereas Gumilev has rejected such strict biologicals for a more complex qualitative explanation.

One example, which comes from my own research, finds that the actual population expansion in Arabia at the time of Muhammad and the growth of Islam was relatively slight. Despite the questionable accuracy of any demographic data, especially for periods far back in history, we have to rely on a relative "empirical generalization" to give an approximation sufficient to make a case for a qualitative as opposed to quantitative basis for population expansion.

Even though Gumilev criticizes the socio-demographic method, the evidence concerning Islam should bear out his hypothesis in contrast to Kozlov's as well as Colinvaux's demographics.

I cite the following demographic data to support Gumilev's argument for a qualitative change as opposed to Colinvaux's quantitative approach to a population shift involved in the rise of Islam. Between the late 6th century and the early 13th century, just prior to the Mongol invasions, historical
sources give little indication of any change in the total populations of the region. According to the best estimates, the Arabian peninsula with a pre-Islamic population of around 5 million reached a high of only 5.25 million before declining to around 4.5 million by 1200. Palestine, with .4 million, lost about .1 million, dropping to .3 million; Iraq remained stable at around 1 million during the entire period; while Syria is the only area to have gained, its population rising from .5 million to around 1.75 million. On the other hand, Iran, with an initial population of around 5 million, lost nearly a third by 1200 to stabilize at around 3.5 million. Further east, in Afghanistan the population dropped from 2.5 to 1.75, while Western Turkistan gained, its population rising from 2 to 3 million. To the north, Anatolian Turkey also gained, rising from 5 to 7 million, inclusive of Byzantine, Seljuk and early Ottoman areas. Finally, the population of the Caucasas rose from .4 to 1.25 million during the same period.

Without digging too deeply into this data, with its plethora of possible extrapolations, I would suggest that while these points in time are relatively far apart, little major population shift seem to have occurred within the periods, despite wars, famines and plagues. Even if Tamerlane built a pyramid of 10,000 heads at one place, then the reproductive rate was sufficient for the region to recover quite rapidly. But what is most striking is that the Jezira (Arabian peninsula) lost nearly a million people; probably to the gain of Syria. Even with the Abbasid shift of the political and economic centre to Iraq, that population remained stable at its previous level, while Syria's gain was also stabilized. Given the total gains within the greater region that can be accounted for by Arab migration, and the loss in Arabia, and even correlated against losses sustained in war, it hardly seems that a major quantitative burst occured. The data (fig. 10) is displayed below:
Figure 10

Population Change in the Inner Muslim World 550 A.D. to 1975

<table>
<thead>
<tr>
<th>Region</th>
<th>Year:</th>
<th>Population (x million)</th>
<th>550</th>
<th>1200</th>
<th>1800</th>
<th>1975</th>
</tr>
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<td>4.5</td>
<td>5.0</td>
<td>15.0</td>
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</tr>
<tr>
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<td>0.5</td>
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<td>1.0</td>
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</tr>
<tr>
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<tr>
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<tr>
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<td>5.75</td>
<td>39.0</td>
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</table>

Total            | 30.05 | 36.95                  | 46.25 | 278.75 |


Gumilev has proposed that the proportion of energized individuals within the total population has increased through rapid reproduction, but that it did not increase the total population. In light of the evidence, not only from the Muslim world, but from other scenes of ethnogenic expansion, Gumilev's explanation seems the more reasonable, as it does not depend on an increase of the total population as does that of Colinvaux. In fact, Colinvaux's theory falls into a category of scholarship which Gumilev (1973e:654) strongly criticizes, stating that two mutually exclusive conceptions have been formulated with respect to the role of biological regularities in the history of society. One shared by many scholars in the West, considers the genesis of forms in the anthroposphere a result of natural selection and ignores differences between man and animal. The second view, found among some Soviet ethnographer, ignores the biological aspect of man and human activities.

Despite his contribution to explaining some of the underlying ecological
mechanisms involved in ethnogenesis, Colinvaux has reduced the problem too far, as have the "selfish gene" variety of sociobiologists. Conversely, to create a synthetic theory like that of ethnogenesis, requires convergence of a number of factors along with some internal or external triggering agent, and thus together they present a complex whole, as no one holds the total explanation. In the face of many obstacles, Gumilev (1973e:655) has developed an important working hypothesis, having, in his own words,

advanced a third view in Soviet science, suggesting the duality of behavior in man and stressing the distinctive character of human evolution in which phylogenesis was transformed into ethnogenesis,

Gumilev seeks a balanced stance, and is critical of attempts to reduce either ethnos, or the historical geography of human populations, to just one of three explanatory modes: landscape, social phenomena, or biological phenomena. He also finds that, in the relation between ethnogenesis and the landscape,

ethnos is an independent phenomenon [but] they are related through feedback but ethnos is not a permanent landscape-forming factor, nor is landscape, without outside influence, capable of causing ethnogenesis (1973e:654).

He likewise considers a different form of dialectic process to operate in the relationship between ethnogenesis and the social forms of motion, as in

the relationship between ethnic and social regularities, there even feedback is ruled out because the earth's ethnosphere represents only a background, and not a factor, of social development (1973e:654).

Similarly, he has reservations over the exclusive use of the aforementioned problem of biological determinism, stating that,

Attempts have been made to view the anthroposphere as a variant of simple biological regularities. There is no doubt that does explain something in ethnic phenomena. But what precisely does biology explain, and does it explain everything (1973e:654)?

Having ruled out the possibility of any one of the three factors -- landscape, social, or biological forms of motion -- or even all three together, as the exclusive cause of ethnogenesis, Gumilev (1973e:655) concludes that
an ethnos constitutes a system generated by a burst of innate energy, therefore we can define ethnos as an energetic phenomenon to the extent that all observed ethnoses represent phases in the process of ethnogenesis. Since an initial energetic process must always overcome the inertia of previous processes, it is obvious that the lower the inertia, the more easily it is disturbed by an unexpected shock.

Here, Gumilev reintroduces the concept of ethnic stability, but within a more complex and interactive framework than before. He regards ecological diversity and stability as different from ethnological stability. The latter form of stability is produced by a relatively simple, hence unstable ecosystem, while conversely, ethnological dynamism arises from a more diverse, complex and hence, stable ecosystem. Because ethnogenic characteristics are inherited, he regards these contrary factors as important in the transmission of energetic qualities setting the conditions for ethnogenic potential, thus unvaried landscapes filled with uniform ethnic content and welded together by human traditions in the form of political institutions react very little to relatively slight shocks of energy. On the other hand Gumilev (1973:655) finds that a combination of landscapes inevitably yields

a combination of economic activities . . . Even if they all had common ancestors, the mere need to adapt themselves to different environments will make them unlike one another after several generations. And that disparity will increase as the systematic linkages between them weaken and the forward movement of society continues.

Relatively homogenous and near homeostatic ethno-landscapes would thus respond only to major shocks that shake up their equilibrium. But in contrast, more diverse ethno-landscapes are much more susceptible to various tremors, not necessarily of great magnitude. Therefore, those relatively simple environments that are normally considered ecologically unstable, may tend to be ethnologically more stable than those diverse environments considered ecologically stable, but which Gumilev views as ethnologically unstable.
Gumilev's proposal that ethnic instability, and hence ethnogenesis, develops within diverse ecosystems, leads to a conclusion that such a diversity tends to naturally expand in proportion to the range of socio-economic activities encompassed. Diversity and expansion inevitably tend towards a drifting apart of segments differing in structure, an increase in differences weakening the system as a whole, and therefore result in a final fragmentation. Conversely, the development of productive forces and the establishment of new productive relations would inevitably leads to a rearrangement of the old social system. If, as a result of the vagarities of history, a particular ethnosc gives rise to two or three states or tribal unions, the instability of the system will be even greater. That, according to Gumilev (1973e:655), is how the social and ethnic lines of development tend to be intertwined in the system.

Gumilev now makes the following proposals. First, a particular ethno-behavioral adaptation has the tendency to attain hegemony within a larger, but diverse, population and landscape ensemble, but in so doing, changes the social dynamics. Second, if this ethnogenic expansion takes several simultaneous or sequential paths, in addition to, or in parallel to, existing segmental differences, then its social system will tend towards even greater instability. These propositions basically encapsulate Gumilev's explanatory (1973e:655) framework for "how social and ethnic lines of development tend to be intertwined in the system." But the necessary ecological maxim of diversity equalling stability remains within the equation, as, according to Gumilev (1973e:655), complex systems are highly productive in economic terms because of a division of labor and specialization; they also offer substantial resistance to their ethnic environment, i.e. to neighbors who attempt conquest, because the custom of commodity exchange also extends to mutual aid, but any internal shock generally destroys such systems with surprising ease. Here we find that while complex systems are stable against external threats,
they remain internally vulnerable to shocks which increase the inherent potential for fragmentation along segmental lines and varying types of linkages.

Complex Ethnosystems as Mosaical Formations

Gumilev defines ethnic systems as having one of two forms: either simple, and monolithic but ethnically stable; or diverse and mosaical but ethnically unstable. The difference between the two forms is further articulated in terms of energy. He refers here to his "opponent Kozlov" as being partly correct when he says... that innate ethnic energy "in fact played no role whatever," contending that "people with enhanced emotional activity, speaking up against the rules and traditions of their compatriots, actually had no place in society; they were either expelled from the tribe or simply slain (1973:655)

Only in regard to the monolithic form of ethnic system, in which "there were no prospects for energy driven people," does Gumilev agree with Kozlov. But he differs with Kozlov over mosaical ethnic formations, on the basis that they "had plenty of opportunity to play on internal conflicts and they found allies on the basis of the principle 'the enemy of my enemy is my friend'." An internal complexity in segmental linkage would thus give rise to a greater range of options for the discontented to find another niche within the system.

Citing a number of examples of this mosaical form, Gumilev begins with the Arabo-Muslim ethnogenesis and its social and landscape environment. According to this principle of segmental division, he finds that during the rise of Islam, Muhammed was able to mobilize the Ansar, or supporting population of Yathrib precisely because the ethnic structure was a mosaical formation. Because of the enmity that "the residents of Yathrib [Medina] felt for the Quraysh tribe, the Arabs for the Jews, and the Northern Bedouins for the Southerners," the small, energized ethnogenic convexium of Muslims (Muhajirun) was able to gain hegemony over the larger mosaical system encompassing the
Arab population as a whole. In this instance, Gumilev's ethnogenic theory relies on a kind of social dynamics, or potential, inherent within these diverse formations. Though not overtly stating so, he implies that it is only into such systems that significant ethnogenic pulses of energy can enter. At the very least, the tendency is for successful ethnogenesis to emerge from these, rather than monolithic systems that require a greater initial surge to break the embedded pattern tending towards homeostasis. Indeed, as he states,

these examples can be multiplied, but we can already conclude that a diversity of landscapes and ethnoses tends to facilitate the start of ethnogenesis, but it cannot be the basic cause since landscape combinations exist constantly and the rise of new ethnoses is a relatively unusual phenomenon (1973c:656).

While such landscapes are a necessary condition for ethnogenesis, Gumilev finds that the triggering agent still remains separate, because

for ethnogenesis to occur, a generation must be endowed with a large percentage of its people with innate drive, and since that drive is a biological characteristic, we have to assume the occurrences from time to time of mutations that are too weak to affect the human anatomy, but do affect man's [and woman's?] behavior, i.e. his [her?] nervous and possibly hormonal activity (1973c:656).

Gumilev finds the limits of his research into the "the physiologic and genetic character of innate ethnic drive" to end basically at this point. He essentially extends an invitation to more specialized researchers to continue on into a more detailed study at the levels which "lie outside our field of competence." For Gumilev (1973c:656), it is sufficient to establish as an ethnological fact, that

energetic populations make their appearance from time to time in different parts of the world that are separated by barriers excluding any possible or cultural impacts. These populations rapidly become ethnoses, grouped in turn into superethnologic systems, which are just as much taxonomic units as the ethnoses, even though the latter can be perceived directly while superethnoses are grasped mentally.

Drawing from his earlier discussion of this process, (L&E XIII), Gumilev still does not specify an entirely satisfactory link between the directly perceived
ethnos and its indirectly, or mentally, constructed aggregate, the superethnos. He defends the preceding proposition and its inherent weaknesses on the basis that in all of these observable levels of ethnos, which

ethnographers build their classifications on; observable indicators, such as language, somatic features, economic modes, religions, the level and character of technology, the gulf separating superethnos from ethnos seem insuperable. But it vanishes as soon as we shift our attention to systemic linkages. Descriptive ethnography then gives way to ethnic history, which establishes both the stable relations between heterogenous elements of a superethnic system and its interaction with neighboring systems (1973e:656).

This point of ethnic history gives a materiality to the process or phenomenon of ethnos, and in turn, to its particular manifestations. It is the systematic relationship between units through various behavioral linkages that unites the diverse segments of an inherently heterogenous superethnos into an operational system. This superethnic process is subject, of course to both its internal regularity and potential fragmentation, and to external, independent social and natural factors that influence the course of its history and timing of its regular phases. This method now gives new meaning to
terms like Hellenic culture, Moslem world, European civilization [including the American, modern Australian and South African] or Eurasian nomad culture [as they] represent not simply words, but ethnic entities that are higher by one order of magnitude than those perceptible to ethnographic observers (1973e:656).

Problems of identifying the relationship between historical events associated with, for example, the Muslim world, or rise of Islam, can thus be systematically interpreted in terms of ethnogenic processes.

Systemic Linkages as Stages of Imperatives

Using the method developed by Gumilev establishes a set of categories for organizing his examples of historical events and related data within a framework of historical geography. These categories involve the regularity of ethnogenic processes and provide links to lower level taxa, that is, to ethnic
subdivisions (e.g., Arabs, Yemanite Arabs, Saan'a Yemanites, etc.; or Turks, Azerbaijani Turks, etc.) within the Muslim superethnos. In addition, a standard classification may allow for commensurability between ethnic units of different ethnic systems which occur at different times according to their stages of development. Gumilev (1973e:656) urges some caution, in that,

If we want to establish the commensurability of phases and intra-phase subdivisions, we must first agree on the nature of the comparison between ethnoses and superethnic communities [cultures]. It would make absolutely no sense to compare them synchronously, within a particular time interval [say, a year], over the entire ecumene. Ethnoses tend to arise at different times, so that the beginnings of one are likely to coincide with the flourishing or decline of another.

But to make the appropriate comparisons, some correspondence is necessary, and which Gumilev claims that his approach provides, in its ability to compare ethnoses as chronological chains of evolutorial patterns, e.g., the beginnings of one with the beginnings of another, the middle with the middle, and the end with the end (1973e:656).

Comparisons between comparable stages are even more effective when viewing ethnic units within an evolutionary framework of "a superethnos as a regional formation." Gumilev stresses that this model of ethnic evolution has been developed through describing relationships within a hypothetical ethnic system "in terms of a single-valued measure: the imperative of the group vis-a-vis the individual." He now opens up a systematic ordering of those relationships and develops their existence as justified by particular stages of the ethnic evolution. After outlining a four stage model of generalized behavioral imperatives, he then correlates them to their appropriate ethnic stage through their uniquely particular linkages. These four behavioral imperatives are viewed as follows in terms of their attributes and respective phases of development as labeled by Gumilev in figure 11 below.
### Figure II: Behavioral Imperative Phases

<table>
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<th>phase</th>
<th>imperative</th>
<th>attribute</th>
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<tr>
<td>rise</td>
<td>dominant</td>
<td>be what you are supposed to be;</td>
</tr>
<tr>
<td>accumulative plateau</td>
<td>individualistic</td>
<td>be yourself;</td>
</tr>
<tr>
<td>internal conflict</td>
<td>idealistic</td>
<td>be like me;</td>
</tr>
<tr>
<td>decline</td>
<td></td>
<td>be like us.</td>
</tr>
<tr>
<td>relic</td>
<td></td>
<td>be satisfied with yourself</td>
</tr>
</tbody>
</table>

Source: Gumilev, 1973e.

Interpreting these stages, the dominant imperative is first encountered during the rise of an ethnus, its attribute being "be what you are supposed to be," and its conditions of development are described by Gumilev as associated with an intensive surge of activity and an expansion of area, naturally requiring maximum harmony and maximum mobilization of forces among all members of the group. The king or the khan is supposed to behave like a ruler, the warrior like a warrior, the slave like a slave. If during that phase, the king proved unfit, he was overthrown; if the slave was disobedient, he was slain; if the warrior was undisciplined or a coward, he was cashiered, and so forth. The principle was a harsh one, but it always was effective in premittting the assertion of authority over neighbors and amassment of wealth. The principle was certainly not proclaimed as law, but it represented a quietly acknowledged code of behavior for each member of the group (1973e:657).

After the expansive stage comes a plateau. The second stage is one in which the individualistic imperative is characterized by the attribute of "be yourself" and the process which Gumilev describes as after the surplus of wealth has been accumulated and the immediate foreign policy objectives... attained, the release of certain numbers of people from a significant part of their obligations gives rise to greater individualism, for which the unspoken formulation would be the imperative, "be yourself," i.e. be not only a tribune performing his functions, but be a Gaius Gracchus; be not only a knight, but be Pierre Bayard; be not only a member of the boyars' duma, but be Vasily Shuyskly; in other words, individual abilities become even more prominent than participation in public affairs. Before these people contributed all their abilities to the common cause, which was determined by the cultural dominant (1973e:657).

Two crucial points are introduced here: first, the concept of individual as
opposed to corporate identity; secondly, the term "cultural dominant," referring to the prior, or corporate stage. In this latter term, Gumilev inserts a basic attribute qualifying the feature of mutual attraction in ethnogenesis. If by dominant we mean the principle around which people consolidate, as in the case of Islam, or Hunnic values, then we are dealing with a symbolic expression of some collective subconsciously perceived disturbance in the energy patterns prevailing within a particular nexus of social and natural landscapes. Again, we find an implication that culture, which earlier was attributed to the level of superethnic community, is the indicator of internal ethnic processes, rather than either the cause of behavior, or the label for a social aggregation. That is, regarding the latter point, culture is an attribute of an ethnos, rather than ethnos a part of a culture. But the essential point in Gumilev's argument here seems to be that, within the initial phase in which superethnic communities are formed, specific cultural characteristics emerge as part of the behavioral stereotype and dominate the behavioral patterns of individuals.

There appears an almost subconscious collective demand for conformity to that dominant behavioral pattern expressed in certain symbolic values and styles of display. After a certain level of expansive accumulation the tension is relaxed sufficiently for variation to begin to appear in the behavioral pattern, without loss of the amount of energy necessary to maintain the system in relation to the demands of its environment. Gumilev gives a further example, in which we assume he is talking about a transition from first to second phase of the Western European superethnos, and which characterizes the difference between these two phases, or level of energy demand, thus:

the difference is best illustrated by the arts: in the Middle Ages, painters did not sign their paintings, and we do not know the authors of architectural masterpieces; in the Renaissance, they became prominent personalities (1973:657).
The third phase of relative stability generates the idealistic imperative corresponding to the attribute of "be like me," and seems to involve a transition reached after ascendancy wherein a surplus of energy remains and its containment proves difficult. As Gumilev (1973e:657) explains it, the development of individualism leads to clashes among the active individuals, usually ending in bloodshed. Within an ethnos, and often within a superethnic community [culture], bitter rivalries begin to engulf those who had been concentrating on external objectives. As a result, the number of prominent individuals begins to diminish, and yet another ethno-social imperative is promulgated, on behalf or either a real or ideal person, "be like me," i.e. strive to resemble the ideal... it is essential for an individual to fit into one or another of these stereotypes if he is to live peacefully within the group. Any deviation, lack of regard, or attempt to follow an independent course is likely to be tacitly viewed as a conspiracy because memories of bloodshed in the preceding era may still be fresh.

Here, he proposes a pendulum swing: first, from a necessary conformity during the initial phase, whereby solidarity was required to overcome the environmental inertia and break out of a constraining situation into a new ethnorhythmic pattern and maintain integrity during this expansion; second, to a more random and divergent movement of energy after external opposition had been overcome; and third, the swing back to a conformity after a maximum tolerance of disturbance inherent in the process of diversifying had been reached. He gives several examples, beginning with the initial external focus, e.g., "in Europe... the repulse of the Magyars and the Normans, the Crusades, the Reconquista."

Second, of several ideal types, whereby,

in the Moslem and Byzantine cultures, the ideal person was a religious leader; among the Mongols it was Genghiz Khan, even after his death, and among the English, the gentleman became the model of ideal behavior type (1973e:657).

In the fourth, and final, phase, the unlabeled imperative marking this stage of decline has the attribute "be like us," and when even that imperative [be like me] prove too onerous, and is replaced by a new formulation originating in the least energetic, but most
numerous portion of the ethnic group, "be like us," meaning, don't try to rise above the common level, reject all ideals, and merge, at least in appearance, with the mass (1973e:657).

Having entered into the long downward slope of decline, the ethnic formation must still undergo transformations of its behavioral stereotype concomitantly with its loss of energy, increase of entropy, and consequent effects on individuals. As the ethnic formation enters its final or relic phase, the imperative turns into the attribute of "be satisfied with yourself," which Gumilev describes as occurring when

Such a weakening of structure, resulting ultimately in total amorphousness, renders the ethnus unstable and deprives it of its defense capability, 'both in the military and in all other meanings of the word. As internal linkages within the group further weaken, they give rise to the the last imperative of the relic phase, "be satisfied with yourself," i.e. don't try to interfere with others. The ethnus as a whole falls apart and vanishes (1973e:657-58).

Having described the psychogical-energetic phases of the developmental process in a super-ethnic unit as a cultural system, Gumilev now turns to building a case for these relationships as the links between individual and group. His stated intention is "to suggest a modal scheme of linkages between the depicted phases of ethnogenesis and the types of relationship between group and individual, since they cannot be equated with one another." Interestingly enough, multiple relationships appear within particular phases, in that multiple psychological imperatives may co-exist at any specific time. Gumilev (1973e:658) thus finds that the first phase of historical rise is typified by the dominant imperative, "be what you are supposed to be," however it is quite possible that, depending on the intensity of that phase and its duration, it may already display -- at various times and in various areas of expansion -- both the individualistic imperative, "be yourself" and the idealistic imperative "be like me."

Having begun to find a non-synchronicity between these psycho-cultural, energetic imperatives and the regular phases of ethnogenesis, he arrives at the second ethnogenic phase, that of historical existence, which
is usually characterized by the above mentioned sequence of all three imperatives; however the experience of some major continuing ethnoses suggests that any one of the three types of relationships may become dominant during that phase (1973e:658).

The dominant imperative may thus linger on as the individualistic and idealistic imperatives emerge among different strata and segments of the population, and most probably, although not necessarily, occupying different spatial locations. Whether or not these differences are manifestations of both natural and social causes, or solely the latter, is not indicated by Gumilev at this point, although we can assume those manifestations are in the realm of cultural behavior. He does, however, conclude that (1973e:658) any ethnus appears to retain the ability, in case of need determined by a combination of internal and external conditions, to produce a particular dominant type of relationship between individual and group.

The survival instinct encoded within an ethnus' behavioral stereotype thus allows a reemergence of its primary dominant imperative in case of threat to its integrity and territorial hegemony over a particular set of landscapes.

The continuation of an embedded primary behavioral imperative may account for revivals of certain patterns within an ethnic system. For example, so-called Muslim fundamentalism may be considered as an upsurge characterizing a collective response to uncertainty and paralleling in similar ways the initial upsurge and passion of the early Muslim community. This example has been widely noted in the Wahabi socioreligious movements throughout modern Arabian history, culminating in 'Abd alAziz Ibn Saud's urban-led bedouin movement, its tribal confederation, conquests and creation of Saudi Arabia. Describing this reflection of primary behavioral patterns, Ruthven (1984) states that other reformers, 'Abd al Wahab sought a return to the 'purity' of the original Islam of the prophet and his companions. Employing the military power of the Saudis and their tribal allies, he created a state which, following the precedent established by the Prophet of Islam, aimed to reunite the whole Arabian peninsula... In creating his dynastic state Ibn Saud followed the classic medieval pattern,
exemplified by his own ancestors, of combining military force with religious enthusiasm (1984:26).

Ruthven (1984:26) describes the behavioral traits of Saudi troops, drawn primarily from bedouin tribes of Mutair and 'Utaiba, as follows:

the Ikhwan [brotherhood] observed a spartan and puritanical regime closely modelled, as they supposed, on the first Islamic community established by the Prophet in Medina... [they] were extremely rigid and literalistic in their behavior: they cut their [gowns] short above the ankles, trimmed their moustaches to a shadow while letting their beards grow freely... [etc] all because it was said in certain hadiths [traditions] that the Holy Prophet was thus attired or trimmed. Above all they were utterly fearless in battle

Here another parallelism emerges between these 20th century Ikhwan and the original Arabo-Muslim ethnogenic behavioral stereotype embedded in a symbolic cultural system for over thirteen centuries. That is, a recurring dominant imperative of the religious political spirit and martial traditions combines in order to restore the purity of an Islam deemed to have been corrupted... "imitatio Muhammadi" meant sooner or later taking up arms against those forces which seemed to threaten Islam from within or without (Ruthven, 1984:26).

In the preceding example, some of the original behavioral patterns can be described in terms of their attributes as a mechanism which operated under the initial dominant imperative, and which has maintained its latency within the continuing behavioral stereotype of the Muslim Arab ethnos. Again citing Ruthven (1984) on what I have personally observed and agree to be the case, as he describes the role of embodied behavioral traits in early Islam:

The physical movements of Muslim prayer were, in addition to any spiritual dimension, a means of promoting group solidarity. The old kinship groups of Arab society had been reinforced by all sorts of subtle physical traits: an individual's membership in a particular tribe might be determined by a special gait or gesture. By subjecting itself at regular intervals to a series of identical and repeated physical actions, the Umma subsumed the particularisms of tribal or racial identity in a common physical discipline. In the original context of beduin Arabia, and in parallel conditions elsewhere, the Muslim prayer had an effect similar to the discipline of the parade ground: the new recruits were welded together into a single uniform body under Allah's generalship. The psychological-
impact of prayer was also effective at an individual level: by insisting on the interruption of ordinary mundane activities at least three times each day, it continuously reminded the believer of the superior claims of God and the community (1984:83).

Returning to his model of linkages between these behavioral imperatives and historical phases of ethnogenesis, Gumilev describes the third phase as follows:

the phase of historical decline is invariably typified by the relationship "be like everyone, i.e. like us," and no longer has the ability to regenerate any of the three other relationships if needed. It is this inability to react promptly and effectively to alien forces that accounts for the decline of an ethn (1973:658).

Here he posits a reciprocity between the declining energetic potential of the ethnic group and its behavioral imperatives. Unable to summon sufficient energy, manifested in the necessary collective behavioral responses lost within the evolving cultural sphere, an ethn is then subject to "alien conquest, absorption by more powerful neighboring ethnoses, or dissolution in an alien culture." But, as in the example of the Arab Muslim ethn, not all such ethn units suffer such a permanent decline.

Finally, Gumilev (1973:658) finds that as an ethnic formation enters its fourth phase, that of historical relics, it is characterized by a favorable combination of external conditions: the remains of population and territory associated with a declining ethn may persist indefinitely as forgotten, remote groups that still preserve the basic characteristic of an ethn, "we and they," and follow a time honored stereotype of behavior.

He also gives examples of this relic phase, finding that many isolated groups living at various stages of civilization and an extremely low level of technology in fact represent final rather than initial phases of ethnogenesis. They would include, the Pygmies of the tropical forests of Africa, aborigines of Australia, the Paleo-Asiatic tribes of Siberia, and the Indians of Tierra del Fuego. [But more importantly,] the degree of adaptation to the natural environment is so great that it permits these groups to exist as part of a biocenosis without a need for improving their implements of labor and their weapons. However, that system of relationships between an

Here, Gumilev discusses the New Guinea environment and ethnoses that have evolved a set of behavioral stereotypes which regulate both human and domestic animal (pig) populations. This situation and corresponding ecological conditions has been extensively studied (Rappoport, 1960) and those conclusions complement Gumilev's model. But without going further into this phase, I will merely state Gumilev's conclusions that

The Papuans have thus been able to maintain an equilibrium with the natural resources of their territory. This represents the zero level of innate ethnic drive. In other respects they are not inferior to more dynamic peoples (1973e:658).

Broader Dimensions of Ethnopsychology

Moving deeper into the realm of ethnopsychology, Gumilev locates the realm within which he characterizes innate drive as representing

not simply a set of bad habits, but an important biological feature that gives rise to new combinations of ethnic substrates, transforming them into new ethnoses and superethnic systems. ... [thus] after the elimination of ecology and the conscious activity of individuals, we are left with the broad area of the human subconscious, not the individual, but the collective subconscious. That is so called ethnopsychology, not in the static state, but in the dynamic with an inertial aspect, in which the duration of inertial is measured in centuries, [cf., Landsape and Ethnos XI] (1973e:659).

This passage is replete with importance as the dynamic and its behavioral form are shifted from the individual to the collective while being dissociated from both limits of environmental determinism and of conscious intentionality. Its purposefulness is depicted here as being more deeply embedded within a collective population not only sharing a range of genotypic and phenotypic traits, but in addition, a resonant pattern or style of behavioral rhythm transmitted between individuals by the totality of daily life to which each individual is subjected. Moreover, the reception of these energetic rhythms is through the
senses and operates in a process of synchronization or entrainment, as explained by current research in interactional rhythms (cf. Chapple, 1970; Sites, 1973; Scheflen, 1976; Davis, et. al., 1982; Hall, 1984).

On The Mutagenic Properties of Ethnogenesis

Within the context of his academic discourse, Gumilev refers to Soviet anthropologists who have engaged in research similar to, but incommensurable with the Western "interactional rhythm" school. He begins by comparing the internal consistency of his geographical, biological and historical findings, in which

the initial burst of energy is associated with a large region endowed with a variety of landscapes and populated by several ethnoses; the ethnic drive is evidently a biological feature that arises within a very brief segment of time and, within two or three generations, alters the alignment of ethnoses, often producing a new superethnos. Such a phenomenon is known as a mutation [cf., p.387] (1973e:659).

Following his statement on internal correspondence, Gumilev asks if the proposition that attributes these processes to mutation, "is applicable to man," and begins a further comparison of his findings with anthropological theory. He then cites Roginskiy and Levin (1956), who find that in short term effects of crossbreeding on inherited somatic changes,

the changes in characteristics result from either adaptation to a new set of conditions or from mutation. In the latter case, the useful characteristic is acquired and the harmful one rejected in the process of natural selection (1956:121).

Drawing on this conclusion, Gumilev (1973e:659) develops an analogy in which

innate ethnic energy is a non racial characteristic and is harmful, if not fatal, for both the bearer and his near ones. Consequently the probability of its occurring is higher and the probability of its taking root is lower than in the case of useful or neutral characteristics. However the peculiarities of ethnic energy are such that the bearer, before perishing, is likely to disseminate the characteristic through the population as a result of occasional liaisons.
Returning to his stand on the importance of endogamy for transmitting a stable ethnic stereotype, Gumilev identifies "occasional liaisons" as the vector for transmission. This secondary channel, external to the normal marriage patterns as vectors for transmission of the characteristics, circumvents any significant interference caused by social stigma attached to these more energized, and potentially deviant individuals, and limiting normal marriage possibilities. In fact, Gumilev finds that it is precisely the existence of such unstable linkages and unidentified fatherhood that rules out the view that ethnic drive is peculiar to a particular class. Although such a view may find support in a random combination of circumstances, it is clearly rendered invalid in the next generation by the appearance of so-called illegitimate children. This demonstrates once again that social and ethnic phenomena are not commensurable (1973a:659).

Tracing this characteristic through its several vectors of transmission, Gumilev proposes that its "wandering character... tends to retard its extermination." Therefore, ethnic characteristics have a double protection. First, in response to Kozlov's notion that social authorities would kill off social deviants and thus preclude reproduction, Gumilev finds that where alternative niches can be found in mosaical formations of sufficient diversity, these "deviant" ethnic characteristics can circumnavigate this form of possible elimination. Second, the suggestion that social stigma attached to deviance might preclude marriage, and hence thwart reproduction, can also be overcome by nonsanctioned sexual encounters resulting in sufficient offspring. Such casual reproductive liaisons facilitate transmission of the characteristic to a another generation, carrying the energetic traits on into the population. These "wandering" tendencies towards adaptive survival enable the ethnic characteristic to be reproduced and operate to its advantage with an enhanced probability of occurrence. And, despite the constantly low probability of "its taking root," this enhanced probability of re-occurrence also benefits from a double set of
systemic linkages. As Gumilev states,

the existence of ... both rigid and corpuscular [social and ethnic] linkages enhances the significance of the characteristic for the system as a whole, be it a social organism or a superethnos. [For] the impact of an ethnos on its natural environment and its ethnic surroundings depends, after all, not only on the level of technology, but also on the energetic level of an ethnos as an entity passing through a particular phase of ethnogenesis (1973e:659).

Gumilev is not content to support his theory of ethnic transmission solely on the parallel between beneficial elements in both social and natural forms, and draws further support from the mutational aspect of ethnogenesis. He cites two anthropological works, (Debets, 1961; and Cheboksarov, 1971), as support for the concept that the energizing and ethnogenic phenomenon is a form of mutation, in that "mutations do not encompass the entire ecumene, but only certain geographical regions," thus raising the question,

how then does mutation differ from bursts of ethnic energy, except for the fact that such bursts occur somewhat more frequently since the nervous system is more sensitive to mutagenic impulses than the body? [cf., p.367] (1973e:659).

Though he has already dealt with this question extensively in his article on "Ethnology and historical geography," Gumilev opens a new dimension of ethnogenesis as a mutagenic process, by claiming its primacy, as

the concept of mutations explains all the peculiarities of ethnic processes, including their uniqueness, within the overall scheme of development. Every process, after all, begins under distinctive geographical conditions, in the presence of a given set of traditions and in a unique historical setting (1973e:659).

Here, Gumilev refers to an earlier exposition on the systemic relations between natural and social conditions of regularity that form an integrated whole. These relations are "linked through feedback," and as "social aspects are no less significant than biological factors, ... they simply complement each other." Furthermore, this linked system operates as a "social organism," distinct from the the "mere coincidence," of social phenomena.
dissociated from their encompassing natural landscape. Gumilev uses the term "social organism," introduced by Yu. I. Semenov, (1966), as a metaphor which "has taken root," and distinct from "a likening of society to an organism, as Friedrich Katzel and Herbert Spencer used the term." He also finds the term useful as an allusion to "stable state culture forms that survive the social formations in which they arose" (1973:e:654).

If Gumilev is correct in his analysis that cultural forms, as social organisms, outlasting their social formations, then an ethnos may indeed survive transitions in social forms that are in a sense "social mutations." He can now establish a parallel metaphorical relationship between long-term "stable state-cultural forms," what Braudel (1980) calls the "longue duree" of a cultural system, and "social mutations" which signify changes in social formations, e.g., from a feudal market economy to mercantile capitalism. Gumilev, however, finds this parallelism corresponds only to the social form of a complementary relationship between social and natural processes. Citing Haldane (1935:82), he finds these natural processes also parallel mutagenic transformations in the "processes of evolutionary biology," and hence "in the geographical environment." Mutations, therefore, affect both social organisms and social formations, albeit through a chain of natural processes that transmits an impact onto them in the form of ethnogenic activity according to the stages through which the ethnic behavioral stereotype passes.

The questions raised here about randomness or regularity in these parallel mutagenic processes involve the principle of purposefulness as introduced earlier by Gumilev, who now qualifies its character. Thus:

The direction of ethnogenic processes is not teleological and is simply determined by the environment, but that is precisely why all the ethnoses of past, present and future have been and will be unlike one another. Hence, we can easily explain the decline in their ability to adapt themselves to new conditions (1973:e:659).
Despite "social mutations" of the "social organism," the actual difference between each ethnos and its particular ethnogenic trajectory is derived from specific, and hence unique, environmental conditions, although some necessary factors must be present in each case to trigger the ethnogenesis. But if ethnogenesis can occur at any point in time, within any social formation, and survive social changes, how does Gumilev explain a declining "ability to adapt" of an ethnos, in non-teleological terms. He accounts for this mutability by the linear trajectory of the process, finding that

the inertia of the initial burst of energy, or mutation, and the formation of a new population under a given set of geographical conditions produce movement in a particular direction. Hence the functional linkage between ethnos and landscape, which has been confirmed by a large number of observations [cf., p.326] (1973e:660).

Finally, we have a new," explanation for ethnogenesis, albeit implied rather than boldly stated. It is a low-level evolutionary mutation within H. sapiens, but one too weak to generate somatic changes. Assuming this to be the case, it would also justifies Gumilev's earlier argument, that ethnogenesis is a transformation of phylogenesis into a form of natural selection continuing on within H. sapiens. But he has not explicitly made the connection, although it stands implicitly within his argument and also strengthens the entire model. Finding one exception to the mutagenic impact on these functional linkages, however, Gumilev (1973e:660) states,

the only exception is parasitic ethnoses living in isolation from the landscape that gave rise to them and occasionally forming chimeric ethnoses at the expense of aboriginal ethnoses. This class of ethnoses includes the phenomenon of colonialism, which differs fundamentally from colonization. But the exception, explainable in each particular case by historical events, merely confirms the rule.

Gumilev's Conclusion to Landscape and Ethnos

At this point, Gumilev brings up the required theory of dialectical materialism, and compares his work to a standard framework that is both
characteristic of Soviet scholarship and a constraint on ideas, much like any dogma. My intent is not to question the validity of that particular frame of reference, nor to assail Gumilev's sincerity in its use, or its significance to his historical-geographic theory of landscape and ethnos. Rather, at some point, the question must be raised as to whether or not this theory can exist outside of that doctrinal framework. But presently, let us contend with Gumilev's conclusions regarding his theory, beginning with its relationship to dialectical materialism. As Gumilev (1973e:660) states this relationship:

Our concept of ethnogenesis conforms to the theory of dialectical and historical materialism, [and] they are in complete accord. The evolution of social forms is spontaneous; the succession of socio-economic formations is a global phenomenon regardless of its uneven development in different regions; the movement of the social form of matter is forward and progressive, and its direction is in a spiral. Consequently we have here a philosophical theory of the general laws of development, which means that it is by one order of magnitude higher than the anthrosphere taken as a whole, and by two orders higher than the ethnosphere, the mosaic of ethnoses through time and space. . . [as] ethnology is a particular case of the application of dialectical materialism to a specific theme and aspect.

The question of whether or not his unique discipline of "ethnology is a particular case of the application of dialectical materialism," might, of necessity, be a paramount consideration for Gumilev. But in terms of a philosophical model, and considering Bateson's (1980) statement that, "the map is not the territory," does this theory really explain an actual reality, or is it simply an interpretive explanation, another model by which to view historical geography, and hence of more heuristic than empirical value. Throughout his discussions of the topic during the decade in which these articles were published, Gumilev consistently argued that ethnos is a property of nature and really does exist, consequently, rather than creating ethnos, he is trying to describe and analyze an actually existing phenomenon, of which ethnos is simply the linguistic label. In short, is it possible to agree with Gumilev's
analysis of ethnos as a natural phenomenon growing out of both social and natural conditions, without accepting the entire premises of dialectical and historical materialism. Most probably, yes, but without accepting all the ideological baggage, and in a modified form more consistent with the entire modern scientific project. Nevertheless, I find that Gumilev has satisfied the disciplinary requirements of his particular philosophical school, while his work also conforms to a broader and more general natural science, and to its specific focus on the human subject as a unique species within nature.

Despite certain reservations about some of Gumilev's contentions and disagreements with, or counter interpretations of, specific generalizations of empirical history, in my assessment, most of his arguments have proved to contain a consistent relationship between his data and theory. For example, in regard to method and sources in relation to his goals, Gumilev states that the primary sources for our construct are derived from historical geography, i.e., from a tremendous amount of historical and geographical data. These data remain mute without analysis. As long as we do not separate out global from local events, geographical environment from the technosphere, the living process of ethnogenesis from their crystallized remains in archeological diggings, all that raw material represents a meaningless kaleidoscope offering nothing to either the mind or the heart. But once we have made the necessary analysis, we find that natural and social regularities tend to interact and combine rather than to replace one another. And that eliminates the controversial issue in geographical determinism and its antipode, geographic nihilism (1973:660).

In this last part of the statement, Gumilev cites Kalesník's (1940) work on general geographic laws, from which, not having access to the work itself I must assume the reference to both geographic determinism and nihilism are drawn. But Gumilev's call is for an emotionally involved ethnology, with both the scientific detachment of physical geography and the personal excitement of anthropology, an intellectual exercise that gives to each aspect of human behavior its recognition. The biological, genetic, chemical, environmental,
and social all have a role to play in the whole of human nature, and in our most consistent and significant "difference that makes a difference," ethnos.

Such a model certainly jumps the boundaries placed by various disciplines on the human project, each claiming it somewhat exclusively as its own, almost in the same way that an ethnos expands, staking out an adaptive, behavioral territory for its own. But in creating a hierarchical taxonomic system corresponding to his assessment of levels of ethnic organization and aggregation, Gumilev recognizes not only the distinct specializations giving rise to different approaches and segments of the problem, but most importantly, he recognizes the significance of scale. In his words, we know that all natural regularities are probabilistic and therefore subject to the law of large numbers. In other words, the higher the order of magnitude, the more certain is the impact of the regularity on the study object, and the lower the order, the greater is the role of randomness and the degree of freedom. In the first case, the limit is the galactic, in the second the atom, since supergalactic and subatomic phenomena are investigated by other techniques and are perceived differently by our consciousness. But between them lies a whole gradation of orders of phenomena, and each order requires attention and a specific approach (1973e:660).

It is in attending to one critical level and order of phenomena in his work on ethnology, that Gumilev contributes to the scientific project, stating that ethnos lies somewhere in the middle. The type of motion in the is fluctuation; their [ethnoses] evolution is inertial and discrete; stability is insured by systemic linkages, and uniqueness and creativity by the impact of the biochemical energy of living matter refracted through the psyche, i.e. that certain innate drive (1973e:660).

Having just redefined his theory quite succinctly, Gumilev concludes from this "definition of the concept "ethnos" that it is an elementary concept that cannot be reduced either to social or biological categories. This conclusion, or rather this result of our investigation, represents an empirical generalization of historical-geographical data. It does not exhaust the problem entirely, but other aspects lie in other fields of science and our judgments would not extend beyond the realm of hypothesis (1973e:660).
We have come to an end of this series of fourteen of Gumilev's theoretical articles published between 1964 and 1973 by Leningrad University (Vestnik Leningradskogo Universiteta) under the title "Landscape and Ethnos," and translated by Theodore Shabad and reprinted in Soviet Geography. Before presenting my own conclusion regarding Gumilev's success in constructing a model that can be applied to any phenomena of historical geography and explain relationships and differences in terms of this particular ethnology, it will be appropriate to take into consideration several critiques of Gumilev published in Soviet journals and also translated and reprinted in Soviet Geography. The following chapter will review and analyse these critiques of Gumilev's theories by his Soviet colleagues, beginning with the historian Kozlov's position of social determinism, and followed by the general seminar convened to discuss their debate.
CHAPTER XVII

ON A BIOLOGICAL-GEOGRAPHIC CONCEPT OF ETHNIC HISTORY

The Background to Criticisms of Gumilev

During the 1960's and 1970's, even before completion of his Landscape and Ethnos series, various attacks were made on Gumilev's theories, primarily from the social and historical side. As he earlier engaged the "unified theory of geography" in its statistical-economic approach, Gumilev has consistently opposed social determinism in whatever form. He has taken a stand in support of the physical side of geography in line with his own proposal of a bio-social form of ethnology forming a separate subdiscipline. Seldom, however has any rough, polemical side to Gumilev seriously emerged in the context of these debates. One has to respect his frustration at the one-dimensional thinking of social determinism. To one who has ploughed so deeply into such a vast complexity as the historical geography of Central Asia, it must have been aggravating to have to contend with such dogmatists. From the the natural sciences, however, we find little criticism of his project. It may be that Soviet scientists, like those in the West, particularly from the cultural geographic, or life science approach, would not see a serious problem in his ideas, although representatives of sociobiology have come in for an oblique criticism from him.
When a large academic seminar convened especially to bring an interdisciplinary perspective to bear on his theories, the scientific side, including geographers, seemed to support the approach, if not directly endorsing his theories. Opposition came primarily from historians and some philosophers. Along with representatives of natural and social sciences, however, these methodologists and philosophers who oversee the state doctrines pronounced their approval of Gumilev's attempt to keep within the rules of historical and dialectical materialism. As to his actual theory and methodological scheme, consensus seemed to support it, and would allow him to continue developing what Drozdov, the session's chairman, called a "working hypothesis."

The initial criticism from Kozlov is treated in this chapter as representing a distinct hard line approach, what would be called "vulgar Marxism" in most circles. It is true that Gumilev is challenging the orthodoxy of both Marxist and non-Marxist social and historical determinism. The man-in-nature synthesis that is taken for granted in North America, especially in the Berkeley tradition, and also important in an earlier part of the fine Russian geographical tradition, suffered a "ruptured epistemology," to use Foucault's term. Geography, like linguistics and psychology, which also applied a "materialist" way of thinking, to the study human artifice as part of our nature, suffered this rupture during the stark rule of social realism and ideological idealism which took a dominant role in Soviet scholarship after the 1920's. In other contexts, one might find Gumilev still fighting a similar battle as many biologically oriented North American cultural geographers do. The difference, however, is that in North America, the tradition has suffered no such traumatic rupture, despite a turn in human social ecology towards such dry and lifeless statistical paths, or excessive wanderings into extreme subjectivity.
Gumilev's work is so little known outside of the Soviet Union that except for a collection of articles published in Hungarian (1979), virtually no analysis of his theories or significant reviews have appeared, except for comments mentioned in the introduction. The most serious criticism to date has come from his colleagues. It would appear from Gumilev's occasional comments and references to critics and his responses, that some attention had been given to his work all along, particularly by the historian V. I. Kozlov, who has certainly taken on the task of criticizing Gumilev from the historical and ideological standpoint within a social science framework. Therefore, en route to my own conclusions, a critique of Gumilev must begin with Kozlov.

V. I. Kozlov's Critique of Gumilev's Theory

Nearly a year after Gumilev's final article in the Landscape and Ethnos series, his most vociferous critic, V. I. Kozlov, a historian at the Institute of Ethnography, took a major position against Gumilev's theory in a lengthy article in oprosy Istori. His main attack is on the introduction of biological characteristics into the category ethnos, which he continues to regard as existing solely/within the social domain. His second line of argument follows along demographic lines, and attempts to disprove Gumilev's propositions regarding interethnic marriage. Unfortunately, his data for increased interethnic marriage in the Soviet Union have been more recently contradicted by a wide range of articles, both from within and from outside of the Soviet Union, and in particular by research findings of the noted ethno-sociologist, Iu. V. Arutjunian (1976). Kozlov's critical article, however, shows the significance of Gumilev's theories in challenging the hegemonic ideology of ethnos as a social construct.
The editor of *Soviet Geography*, T. Shabad, who it is assumed translated and wrote the abstract of Kozlov's article, has given us another precise description of Gumilev's model in order to view Kozlov's critique within a more appropriate frame of reference. According to Shabad, Kozlov makes a critique of L. N. Gumilev's model of ethnic development [treating] mankind largely as a biological species and attributing the origins and disappearance of ethnic communities to biological factors, including a psychic innate drive that is presented as the key element in the generation of new ethnic entities (1975:522).

Furthermore, we can immediately see the position that Kozlov takes, in that The author [Kozlov] insists that ethnic communities are social rather than natural categories, and that, in accordance with historical materialism, social, rather than biological, aspects are decisive in all forms of social life (1975:522).

Kozlov's Defence of Social Determinist Marxism

Without paying too much attention to Kozlov's discussion of Marxism, I will attempt to bring out the significant arguments in this critique and compare the two positions -- Kozlov's and Gumilev's -- in terms of their own statements. Kozlov begins with a paean to Marxism as an evolving science constantly in conflict with "idealism" on one hand, and "vulgar materialism" on the other. His primary thrust is against the latter concept and one particular aspect of it, which he defines as geographical determinism, which contends that the state and evolution of society or of an individual social, socio-political [state] and other groups and institutions are determined mainly by the geographical environment or individual environmental elements, such as climate, landscape, [or] geographical situation (1975:522).

Written from a historical and dialectical materialist perspective, Anuchin's (1977) treatise on the history of geographic theory found the determinist position to be more advanced than the idealist one because it was more materialist. In the long run, however, he still found them wrong for being "geographically, or environmentally, determinist." Alternatively, none of these
geographical trends within Soviet Marxism, except Gumilev's, challenges its social determinist line. Kozlov also follows this dogmatic line to the extent that his argument ignores an epistemology in which a historical and dialectical science is increasingly refined by empirical findings. At the present stage of this refinement, Kozlov (1975:522) rejects a more natural scientific approach as geographical determinism because it was founded, in his opinion, on a metaphysical method 'which seeks the principal cause of motion and evolution of social phenomena outside of those phenomena. Yet we know that external causes, i.e. linkages and interactions between things or phenomena, are causes of the second order, and not of the first. The geographical environment . . . cannot explain the qualitative diversity of social phenomena and their motion, i.e., the transition from one qualitative state to another.'

Here we can begin to make sense of the problems encountered by Gumilev in attempting to foresee such methodological criticisms, and how carefully he wove a path between the two fields, acknowledging which aspects of his theory were operating within the social and which in the natural arenas, according to the doctrine. As Kozlov continues his historical critique of geographical determinism, he finds that by the 19th century, biological concepts of social relations had become focused in so-called anthropological conceptions that regarded man simply as part of nature and ignored the role of social-historical practice in shaping the human consciousness . . . [and] sought to demonstrate the direct impact of biophysical and anthropological peculiarities of man on the march of social progress (1975:523).

Continuing on, Kozlov discusses the problems of racism attributed to this school of anthropology, possibly confusing its genuine intellectual contribution with the structural racism permeating society and residing more in the persons proposing the theories, and the use made of them, than in the actual theories. Next in line for Kozlov's critical review, Herbert Spencer's 'organic theory of society' is rejected along with social Darwinism.
As Kozlov brings us up to the end of the 19th century in this historical critique of what we can only assume that he thinks are Gumilev's intellectual antecedents, he now attacks the biological-psychological concepts -- Freudianism, behaviorism, etc., -- [which] sought to explain human behavior and social relations in terms of biologically caused peculiarities of the psyche, mainly the subconsciousness, that tended to reduce personal and social consciousness to conditional reflexes, etc. (1975: 523).

In a long defence of Marxism, Kozlov points out that many of these "natural" concepts of human behavior and history were direct attacks on the methods and theory of dialectical materialism, and were also used to justify racism or social inequality as "a natural consequence of biological, racial, or psychobiological inequality." Again, not only has Gumilev carefully constructed a criticism of all the excesses that these forerunners of modern sociobiology exhibited, but he directly countered each one with not only a disclaimer, but an argument as to how his theory differed from them. In fact, I would say in regard to Kozlov's criticism that racism, as such, represents only an obsessive variant of a normal human characteristic of ethnocentrism. Moreover, those who seek biological or natural justification for practices of extreme social inequality or genocide, would find other legitimating myths should these fail. Furthermore, as Kozlov moves his critique into the 20th century, he continues to criticize any recourse to natural causation as part of "bourgeois literature" and decidedly anti-Marxist.

Kozlov may represent interests other than his own opinions, yet he goes far beyond Marx's own construct of nature and discussion of biological and organic theories. In fact, he might be accused of vulgar Marxism and an over confidence in the mythology of a social science dangling in an idealist state without recourse to an inherently obvious dialectical interaction between the social, biological and environmental processes as developed by Gumilev.
Finally, his warning on the dangers of using the "natural sciences for purposes of historical-sociological analysis," and in not being "sufficiently familiar with historical materialism," falls into the crack of doctrinal polemics better suited for the political text than for science. To resurrect a motto of the 1960's, "if you are not part of the solution, you are part of the problem," Kozlov represents the abyss of state-dogma. In a time when the biosphere is threatened with multiple levels of ecocide from human political fetishism and the dominant elite's obsessions with the technosphere, Kozlov represents part of the problem that Gumilev and other serious scholars are trying to overcome in finding out how our species operates as a biological entity before it is too late to stop our charge into oblivion.

Before moving on to Kozlov's attempt to bring his critique of geographical determinism and psycho-biologisms to bear on Gumilev, one important point is that in addition to the entire Landscape and Ethnos series, Kozlov also refers to several of Gumilev's other, untranslated articles: "On the term ethnos: ethnos as a phenomenon" (1967); "Ethnos and landscape" (1961); "Ethnogenesis and ethnosphere" (1970); and "Ethnogenesis -- a natural process" (1971). As Kozlov puts it,

that these articles were published in natural-science journals, probably accounts for the fact that the Gumilev conception has escaped the attention of most historians and philosophers and has thus avoided criticism (1975:524).

Kozlov does not seem convinced of Gumilev's critical interaction within academia. It is a fact, however, that the journal Priroda (Nature) and the Leningrad University Vestnik are widely read. Gumilev has also been involved in interdisciplinary work and co-authored articles with a number of other respected scholars, including historians, archeologists and even the Tibetan philologist Kuznetsov. Furthermore, Gumilev's (1966f) ethno-historiographic work on
the texts of "Slovo o Polku Igoreve" and (1965) study of the Caspian Sea in Central Asian history were translated and published in *Cahiers Du Monde Russe et Sovietique,* certainly a major publication in cultural and social history. As to Kozlov's claims that "Gumilev ignores the work of Soviet scholars in the field of ethnic history," throughout the entire body of Gumilev's work he has copiously and carefully cited prominent ethno-historians from Debets to Arutunian, from Chevboksarov to Bromley, Tokarev, and even V. I. Kozlov. While Gumilev's contentions with Kozlov have been substantial, his treatment of other contemporary Soviet scholars in ethnic and historical sciences, (e.g., Okladnikov, Semenov, etc.,) have seemed quite collegial. On the other hand, he has drawn widely from Russian sources in ethno-historical literature and from prerevolutionary scholars, such as our critic's distant forebear, P. K. Kozlov.

**Exposition of Gumilev's Concepts**

Quoting several rather long passages from Gumilev's work, Kozlov set up a position from which to criticize their theoretical content, but delays doing so until he reaches Gumilev's criticism of the historical method for failing to solve the problem of ethnos. Now Kozlov retorts,

this methodology, "newly invented" by Gumilev, turns out to be the biological-geographical approach to ethnos and to phenomena in ethnic history. [And] the need for such a methodology is not so much proven as proclaimed (1975:524).

Is this not Rostlund's (1962:49) observation that "environmentalism was not disproved, only disapproved," turned upside down. In fact, such a "claim" goes back to Marx and Darwin, providing the basis for a modern science of mankind. That Gumilev has picked up this claim, turned it into a working hypothesis and operationalized it relation to a wide spectrum of primarily Soviet scientific sources, seems to escape Kozlov. Hence, he quotes the following passage from Gumilev's "On the term ethnos," subjecting it to a sharp rebuke:
Not one of the social sciences gives an answer to the essence of the problem of ethnology and ethnogenesis or even permits the creation of a terminology that would be precise and generally understandable. Let us therefore try and turn to the natural sciences, to geography and the cognate branches of biology. We have already pointed out that mankind can be usefully treated as the species Homo sapiens. In that case all the laws of development of any mammal species are equally applicable to man, except for certain specific peculiarities that are immaterial in our context. Ethnic phenomena lie in the sphere of nature, and therefore they can be conceptualized only by means of the methodology that yielded such brilliant results in physical geography, zoology and in the theory of heredity (1967:13-14).

Gumilev certainly is not shy. His style boldly addresses the problem and defends a synthetic bio-social approach to ethnos. To Kozlov, these "propositions are false," as "the laws of development of any mammal species . . . cannot be applied to H. sapiens." Certainly, in the heat of exchange, we can see a problem underlying both Gumilev's and Kozlov's claims, the desire for an all-encompassing paradigm that explains the entire spectrum of ethnos. This also addresses a fundamental problem in Marxism, its epistemological monism, out of which grow claims by its dogmatists that "it has all the answers." In this exchange, however, Kozlov's main point of contention focuses on Gumilev's associating human and mammal behavior. Though taken out of context, Gumilev's claim that "except for certain peculiarities . . . "there are general laws of development that can be applied to all mammalian species including H. sapiens," would seem to be undeniable to a proponent of evolutionary theory as enshrined in Soviet doctrine. Assuming that Gumilev is discussing the phylogenic-ethnogenic connection, do not all species continue to adapt and change their organization in response to both environmental and ontogenetic stimuli. As mutations can occur at all physical and behavioral levels of the natural selection process, these notions seem basic to introductory biology. Then too, the term "social," although possibly overextended by sociobiology's use of it, is useful to describe the organized behavior of many species. Unfortunately, Marxist
discourse encodes it as a unique category of human conscious (intentional) action, restricting the use of "social" as a term in a broader ethology, e.g., the "social" behavior of bees or ants. Nevertheless, Kozlov next discusses the earlier debate between Gumilev and Artamonov.

Again Kozlov rebukes Gumilev, this time for his manner of rebutting Artamonov’s criticism. In particular, he objects to Gumilev insisting that ethnos is a phenomenon of nature . . . [and thus asserting] the legitimacy of the biogeographical approach to ethnos [in that] the human organism is part of the earth’s biosphere and participates in the conversion of the biocenosis . . . Artamonov cannot prove that a professor breathes differently from a Bushman, or that he reproduces by asexual means, [etc.] (1975:525).

Pointing to what he considers an inconsistency in Gumilev’s definition of ethnos as a natural phenomenon, Kozlov states that, "either [Gumilev] did not wish, or was unable, to offer a clear and comprehensive definition of ethnos and limited himself to approximate characteristics." Even though quoting several of Gumilev’s more descriptive definitions of ethnos, Kozlov does not appear to see the overall progression of Gumilev’s concept of ethnos and construction of a method with which to better apprehend the phenomenon, refined over years of exploring new approaches. Missing the notion of process inherent in Gumilev’s methodology, Kozlov focuses his ire on Gumilev’s (1967:14-15) definition, which he quotes as follows:

ethnos constitutes a biological entity, ranking taxonomically below the species as a population, and the ethnic division of mankind is one of the ways in which it adapts itself to landscape, not so much in structure as in behavior (1975:525).

Without having offered any substantive rebuttal to Gumilev’s definition, Kozlov adds fuel to the fire by turning on Gumilev’s (1973a; 1973e; 1970) terminology for ethnic categories, stating that Gumilev does not deny the existence of such types of ethnoses as tribes, peoples, nations, which are already established in the historical and ethnographical literature; he also mentions socialist
nations, but in his exposition of ethnic history he makes infrequent use of these terms. Instead he introduces new terms (1975:525).

Kozlov goes on to extensively quote while briefly deriding Gumilev's new terms. Needless to say, he cannot seriously expect to fault a model merely because it introduces new terms. Not pushing the point, however, Kozlov moves on to what he considers "the key to the Gumilev conception... the notion of passionarnost or innate drive, as the basic moving force in the process of ethnogenesis and in all ethnic history." Briefly reviewing Gumilev's development of the concept passionarnost and attempts at definition (1973a: 44; 1970:50; 1973c: 101; 1973e:98), Kozlov (1975:526) focuses on the following points:

1. its role as "the basic moving force in the process of ethnogenesis";
2. its place within the biosphere as "fluctuation in living matter";
3. its "refraction through the nervous activity of the subconscious that effects changes in the vector of metabolism";
4. that "bursts of such drive... tend to create changes in populations and lead to the formation of specific groups... called ethnoses";
5. its definition as "an organic ability of the organism to absorb energy from the outer environment and to extend it in the form of work";
6. that it cannot "be treated as a socio-economic phenomenon because this would conflict with the law of conservation of energy [and], therefore... [as] a biological characteristic... arises as a result of mutation and is eliminated by natural means"; and,
7. thus, as "a biological characteristic, there occur from time to time mutations that are so weak as not to affect the human anatomy, and affect only human behavior, i.e., nervous and, possibly, hormonal activity.

Kozlov, could well be congratulated for a fine exposition of Gumilev's thesis having interjected no overt critical commentary on these points. It is as if he thinks that an exposition of the ideas will sufficiently show their error.

In the next point taken up by Kozlov, again, he simply quotes from several of Gumilev's propositions regarding the historical activity of innate ethnic drive thus:

the formation of a new ethnos always starts with a particular characteristic: an invincible inner striving by a small group of people toward extremely intensive purposeful activity, which is always associated with a change in the environment, either ethnic or natural, and in which attainment of the goal, though often illusory or
disastrous for the subject himself, is perceived as more precious than life.... Individuals endowed with that characteristic perform, and cannot help but perform, deeds that, in their totality, break the inertia of tradition and provide the stimulus for the creation of new ethnoses (1975:526, citing Gumilev 1970:46-49).

Kozlov then cites examples given by Gumilev of "people endowed with such innate drive... [e.g.] Alexander of Macedonia and Muhammad, the founder of Islam; John Huss and Napoleon," and so forth. What is significant here is the notion that "striving" which plays an important role in the emergent ethnos and consequently historical processes, is, as we have seen earlier, placed in a biological and subconscious, rather than a conscious, intentional mode. What Gumilev has to prove, and Kozlov to disprove, is that empirical evidence supports a natural basis for the historical events that occur and involve individuals in changing the dimensions of power, territory and behavioral relations within populations.

Having established what Gumilev has stated about innate drive as the basic principle of ethnogenesis and the process whereby it affects populations through individuals, Kozlov takes up two points regarding these mutations: first, their geographical distribution, and secondly, their random progression towards complementarity. Concerning the geographical distribution proposed by Gumilev (1973d:76; 1970:1:52), he states:

the mutations that are at the basis of innate drive and, through it, at the basis of ethnogenesis occur, according to Gumilev, in some parts of the world that are endowed with particularly favorable landscapes. [As] he says: "innate drive not only is transmitted from parents to children, but arises at a particular times in strictly defined regions with diffuse boundaries." Such favorable landscapes, which are the exception rather than the rule on the surface of the earth, although they do occur in all parts of the world." On a map compiled by Gumilev, such regions take up less than one-fifth of the inhabited land area: in Africa, they are the Nile valley, part of Ethiopia and the western Sudan; in Asia, the Yellow River valley, Indochina, part of Mongolia and Asia Minor; in North America, an area south of the Great Lakes, a northern belt near the Pole; and in southern Mexico, including Yucatan; in South America, the Peruvian highlands, etc. (Kozlov 1975:526).
As Kozlov continues his exposition, I will simply follow his outline and comment only in a context where he introduces an argument, as here, where Gumilev's map (not available) would generally correspond to locations of significant archeological or historical evidence for ethnogeneses.

The second point discussed by Kozlov about the impassioned (innately driven) mutational basis of ethnogenesis refers to the way in which it "unfolds around people with innate drive as a result of mutation [which] proceeds at random." Quoting Gumilev (1973a:42-43; 1973e:95), Kozlov makes several subsidiary points here, beginning with statements about the part played by complementarity as a natural phenomenon, thus

1. complementarity is . . . an unconscious attraction of people of a particular mold towards one another;
2. it takes "the principal role in . . . the establishment of the primary group, the nucleus of ethnos;
3. also found in other animal species, it is not a social phenomenon;
4. in this "scheme of ethnogenesis . . . the initial stimulus that disturbs the inertia of quiescence is the appearance of a generation of people that includes a certain number of individuals endowed with innate drive," disturbing the "customary setting";
5. these individuals are obsessed with an "absorbing purpose, the need for resisting the environment [which] induces them to unite and to act in accord," thus forming "the first consortium";
6. this first consortium of a particular ethnic formation, "soon acquires social forms dictated by the levels of social development of the given period";
7. "favorable circumstances" allow the consortium "an advantageous position fostering an increase in numbers through intense reproduction";
8. "this gives rise to the ethnos as a system in which the subordination of individuals constitutes the condition for existence."

The next aspect of ethnogenesis taken up by Kozlov, concerns what he sees as Gumilev's tendency "to biologize ethnic history, reducing it to a natural birth-to-death cycle." He accuses Gumilev of describing "ethnogenesis" as, a process rather than a state . . . based on an innate drive in people and on biochemical processes shaping their subconscious or the sphere of their emotions . . . [it] is an inertial process in which the initial charge of energy is spent in resistance against the environment, leading either to ethnic equilibrium with the landscape or human environment, (1975:527, citing Gumilev 1970:2:50; 1973e:95).
Certainly, the "birth-to-death" label fits Gumilev's model, its simplicity is double edged, in that while easily criticizable, it may also provide an effective explanation. Likewise, the linear trajectory of the inertia is equally simple, but not necessarily simplistic, and may account for ethnic resistance to absorption.

Next, Kozlov takes up Gumilev's views on ethnic history beginning with his "two ways" of defining "the basic stages of ethnic history":

(1) ethnoses that enter into a biocenosis and are part of the landscape, and are thus restricted in their reproduction; this mode of existence is characteristic of many animal species that seem to be arrested in their development . . . and,
(2) ethnoses that multiply intensively, settle beyond the boundaries of their biochore and modify their primary biocenosis. This second state is termed succession in physical geography." Succession, also called dynamic or historical state, thus characterizes the birth and development of ethnoses, and persistency their death, (1975:527, citing Gumilev 1970:250).

Kozlov also discusses Gumilev's (1972:53) "table of attributes of these conditions," of the basic stages of ethnic history, which has already been discussed in this thesis, and reproduced herein, (cf., Fig. 9, p.266). As to the second point, Kozlov discusses the life cycle aspect of the model "in the context of ethnic history," in which Gumilev (1973a:46) distinguishes:

a period of formation . . . [then] of losses or decline of an ethnos . . . [the latter] attributed mainly to a reduction of innate drive . . . [thus] first, a reduction of the level of exertion derives from the steady elimination of active members from the ethnos; second, exertion is lowered as a result of a simplification of the ethnic structure, stimulating an apparent increase of activity, which as a general rule, is not creative, [etc.] (1975:527).

Kozlov continues to quote Gumilev's explanation of how these secondary attributes are not a product of innate drive with its "capacity for superextension," but a socio-psychological deviation from those original qualities, thus "these pseudo-activists are incapable of creating or preserving works of culture and soon become the victims either of hostile neighbors or of themselves."
After not commenting on Gumilev's previous propositions, Kozlov now follows the argument that ethnos is a "closed system and a population separated from others by geographical and genetic barriers." Here, he presents Gumilev's conclusions on the harmfulness of exogamy for the ability of an ethnos to transmit its traditions. As Gumilev stated (1973a; 1973d), mixed marriages tend to disrupt the continuity of a tradition in transmission, by introducing new variables that eventually erode the interethnic boundaries leading to assimilation, and that "social institutions created by exogamous ethnoses are not long-lived" (1973a:47). While approving these statements as "containing some social aspects," Kozlov complains that "Gumilev tends to biologize even the process of transmission of ethnocultural traditions, equating it to the phenomena of signal heredity in the animal world." Nevertheless, he continues to present Gumilev's ideas about, the clash of two different processes giving rise to interference that disturbs the rhythm of both components . . . and at the level of superethnos . . . interference between the fields of innate drive of different rhythms inevitably leads to a catastrophe . . . [as these] associations are chimera and therefore of low resistance . . . short-lived . . . and the collapse of a chimera system leads to the annihilation of its components and the death of those who are part of the system (Kozlov 1975:528 citing Gumilev 1973c:90).

Kozlov's Final Critique

Concluding that this preceding exposition summarizes "the essence of Gumilev's conception," Kozlov now seriously begins his critique, "made difficult by the all-encompassing spread of his (Gumilev's) interpretation," and his "illogical . . . combination . . . of historical and other data." He challenges Gumilev's treatment of "mankind solely as the biological species Homo sapiens," claiming that it does not follow that ethnic communities, such as tribes, people or nations, are solely biological categories or discreet populations ranking taxonomically below the species . . . and that social groups
within these communities, sects, circles, etc., are analogous to biological consortia (1975:522-29).

While contrasting these categories used by Gumilev with different treatment by others, (cf. T. A. Rabotnov, "A consortium as a structural entity in biocenosis," Priroda, 1974:2), Kozlov takes the biological argument to its logical extreme, finding "that social classes, too, are biological categories since the individuals within those classes, 'reproduce by sexual means, etc.'" While he criticizes Gumilev for "resorting to comparisons from natural sciences," Kozlov (1975:529) points out that a comparison is not tantamount to a proof; the fact that an ethnos is viewed as a "field of a particular rhythm" does not necessarily mean that this terminology fits the nature of an ethnos or that ethnic contacts lead to "interference" as, for example, between fields of light.

In Kozlov's opinion, "the historical and ethnological 'examples' cited by Gumilev fail to support his conclusions," although Kozlov does not offer any alternative examples to counter Gumilev's, but, for the most part, maintains the discussion on a theoretical level.

In contending with Gumilev's propositions, Kozlov states that because of "the absence of logical proof in Gumilev's argument," it is [sic.] "unnecessary to refute each basic proposition, many of which range far beyond history and ethnography." Kozlov dismisses "the question of the biogenetic causes of the appearance of people endowed with innate drive and differing from the norm; [because] that should be a matter for psychopathologists." Likewise, he dismisses the "role of innate drive in history and ethnogenesis" as he can find no significant example of it in "primitive man," while emotional individuals opposing society "were simply expelled . . . or slain." But here we come to the crux of Kozlov's critique, when he states that the role that heroes endowed with innate drive might have played in class formations is of some interest, but materialistic historians tend to focus not so much on the biography of people endowed with
innate drive as on the laws of social consciousness and on changes in the historical evolution of mankind, of individual countries and peoples, social classes, etc. (1975:529).

The basic premise on which Kozlov criticizes Gumilev is derived from a set of abstract categories devised by social science, and particularly in the Marxist variety, applying events and relations between individuals within aggregates designated through those particular categories. The following statement by Kozlov allows us to see the basis of much of his critique. Thus

historical materialism acknowledges the social-biological duality of human nature, but holds that the social, rather than the biological element is decisive in all forms of social life. Homo became sapiens only in the course of, and as the result of, socialization... [and] the increasing sapient evolution of each new generation is made possible only in a social environment... On the whole, the process of sapient evolution and socialization, though somewhat analogous to the phenomena of signal heredity observed in animals, is qualitatively different and is controlled by a complex system of socio-cultural institutions (1975:529).

The premise that these categorical social constructs of reality are the leading edge of knowledge of that reality is equally a problem in the West, where those with a vested interest in their reified disciplinary paradigms have likewise opposed any threat to their neat categories and formulas. If anything can be learned from Gumilev's theorizing, it concerns a return to the origins of both dialectics and the recognition of humankind's duality: first, in the natural world of bio-chemical and physical constraints; and second, in the social world of abstract signification and reflection, or social constructions of reality. His attempt to resolve the contradictions between these two worlds demands a more serious critique than Kozlov's exposition of worn out Marxist dogma.

The next section in Kozlov's article digs into the doctrines of historical and dialectical materialism in order to support his premise that ethnic communities are social constructs. Without getting too deeply involved in this labyrinth, we can note that the orthodox Marxist position divides human
social life between production of the means of existence, a socio-economic process, and reproduction, "the production of man himself," a "socio-biological" process, "but the basic laws of reproduction are still determined by social rather than by biological factors." We are confronted by Kozlov's social determinism as a motivation in his critique of Gumilev and antipathy towards any tendencies to privilege the biological side of the picture.

At this point, Kozlov presents several examples of how a socially deterministic Marxist ethnology treats ethnos. First, he states that ethnic communities first appeared as "tribes," the development of which was caused by the need for organizing both types of production. The first task was performed by social labor within the boundaries of tribal territory; the second by dividing the tribe into two or more even numbered exogamous clans, whose members entered into marriages. There is, of course, no biological element in the clan-tribe type of ethnic community. As for the impact of the geographical environment, it was indeed significant as long as the level of development of productive forces remained low... but, environment in itself could not determine, either the nature of this type of community or the nature of ethnogenesis, such as the then widespread process of ethnic division that constantly gave rise to new tribes. [But] in class-oriented socio-economic formations, some functions of clan-tribal formations tend to disappear and to be replaced by other functions, but the previous linkage between ethnic communities and the socio-economic aspects of life is preserved... (1975:530).

This is as far as it is necessary to go into the Marxist model of historical social evolution, as Kozlov continues to expand on it, demanding a clear separation of the social from the natural and hegemony for the social. The only acknowledgment that he gives that such biological realities might possibly continue to play a role in human social interaction is a nod towards the rapid development of ecology, including human ecology, as a science concerned with the relationship between organisms, populations, and their environment... [but] ecology cannot and should not shape sociology, [and] the nature of social forms and their basic laws are not determined by geographical or biological factors (1975:531).

It is clear from this presentation that Kozlov is operating within a fixed ideological frame that cannot accept any deviation from the model and its
boundaries of inquiry. A condition in which he is not alone, although not all Marxists in accord with his rigid views.

Attempting to criticize Gumilev for his deviation from Marxist principles, Kozlov finally brings up some concrete examples for comparison. Having argued that Gumilev has misused Marx and Engels, in his quotes from them, deserting the orthodox consensus that social consciousness dominates all social relationships, Kozlov contends that "Gumilev's ideas do not conform to historical materialism; and many of his ideas lead to false conclusions." For example, Kozlov discusses Gumilev's attitude towards ethnic groups as "arrogant" and discriminatory. First, he states that Gumilev treats tribes, peoples and nations as "phenomena of nature arising under the impact of mutationally caused biophysical forces and since ethnogenic mutations are associated with particular segments of the earth's surface, all peoples arising outside such segments would seem to be illegitimate. Since processes of ethnogenesis have in fact been taking place throughout the ecumene, most of the peoples of the world would turn out to be illegitimate (1975:531)."

Second, Kozlov (1975:531) accuses Gumilev of discrimination, in that the biological inequality of peoples' origins is then further supplemented by inequality in terms of stages of development from birth to death; it is quite obvious that Gumilev takes a different attitude towards ethnoses in the stage of biological flowering than toward ethnoses that . . . have been doomed by nature to extinction.

Third, Kozlov (1975:532) charges that Gumilev's attitude towards ethnic groups, comparing them with lichens, ants, crocodiles, etc. and attributing to them negative characteristics, to some infanticide; to others, disorderly reproduction, is combined with a disdain for the masses of people making up those ethnoses. [Moreover] the overwhelming majority of those people . . . are devoid of that innate drive and could not survive or foster offspring if it were not for those biophysically distinctive people endowed with innate drive, people like Alexander . . . Mohammed, Genghis Khan and Napoleon, around whom they would rally according to the principle of "complementarity" . . . [moreover] if such inequality among peoples derives, as Gumilev asserts, from the impact of biological mutations, it follows that such inequality cannot be modified by social means.

Fourth, Kozlov accuses Gumilev of committing
equally serious errors in characterizing the interaction between ethnoses... ethnic relations... [in contrast to what] the classics of Marxism-Leninism... concluded... that ethnic friction and ethnic conflicts derive in the final analysis from conflicts in the economic sphere, in the area of productive relations, and that as a result of the socialist... transformations, ethnic relations will develop harmoniously... [i.e., Lenin who] endorsed natural assimilation on the grounds that it was one of the prime movers in moving capitalism into socialism (1975:532).

Here we encounter another surfacing of subtexts in Kozlov's opposition to Gumilev's theory, or to any construct that would undermine the Greater Russian chauvinistic ideal, which has appropriated the Marxist paradigm under a Leninist banner, and in a rather less than altruistic unification of the workers of the world, or at least the different nationalities within the Soviet empire. One might say that Kozlov, with all due respect to the person and to the academic, is a fiction, a symbolic standard set flying on the ramparts of an ideological fortress to intimidate those within or without who would challenge the foundations of an institutionalized system of power and its legitimating discourse. As the banner spread by Kozlov reads,

there is no question that processes of ethnic consolidation, combining ethnoses into larger ethnic communities, are of positive significance; in the Soviet period such processes could be observed, for example, in Central Asia, as clan-tribal and ethnographic groups came together to form the Turkmen, Kirghiz and Uzbek nations. As a result of widespread interethnic marriage; expansion of cultural-linguistic contacts, etc., a new historical community of people, the Soviet people, has arisen on the basis of economic and political-ideological unity in the USSR (1975:532).

While this idealistic and rhetorical claim proposes a rational social engineering under the appropriate ideological framework, it cannot be scientifically or factually supported. First, an acknowledgement of any natural process which would dominate the ethnic selection process undercuts the ideological promise of a conscious, rational human science changing what is a socially constructed set of human structural and behavioral relationships. This most obviously denies the fundamental practice of post-renaissance science, which is to
challenge, question, and pose hypotheses to be tested. Second, the plain fact is that intermarriage has not occurred between nations of the USSR. Arutunian (1973:51) found in his studies on ethno-psychology among Soviet citizens that, for example, of all ritual life, the value ascribed to an ethnic marriage, as a national ritual . . . shows a tendency to rise . . . with no significant discontinuities between prevailing and preferred forms, indicating a not very rapid atrophy of this aspect of ritual life. . . . [in that] all in all, national culture not only reveals persistence but undergoes active development in its most progressive spheres.

Or, on the other hand, we could turn to a more recent and broader study by a respected authority on Soviet nationalities, (H. Carrere d'Encausse, 1979), who discusses the situation in similar terms. She finds (1979:13,16,265) that according to history, the Empire of the czars was a 'prison of the peoples' and Lenin opened it . . . [but] more than Lenin . . . it was Stalin who was to engineer the reconstruction of a Soviet multi-ethnic state in which the former members of the empire would wind up side by side . . . [now, however], national diversity and intensity of national feelings characterize the Soviet political scene . . . the obliteraton of national differences and their fusion in a new and superior community -- the Soviet People -- has not succeeded. It hardly matters if the Soviet leaders declare that this 'Soviet people' exists. Their repeated assertions sound more like incantations.

What is at stake here is more than anthropological or geographic or sociological theory, it is the political mythology that has over more than half a century attempted to create a transcendent population, who sacrificed their old ways for the new, including their previous nationalities or ethnic identities, to become both the new socialist and the new Soviet people. Gumilev has challenged this assumption and dogma with a more realistic concept that recognizes the natural, underlying behavioral affiliation which motivates groups of people with significant common recognition and rhythmic patterns of interaction that can only come from daily life, not from beliefs or ideologies, although these are inherently woven through the fabric of social life.
Kozlov's attack on Gumilev now turns ugly. The sacred cow has been shown to be barren and milkless. He accuses Gumilev of promoting a theory that "justifies ethnic segregation and eugenic laws prohibiting mixed marriage," in short, racist and reactionary attitudes. Clearly, Kozlov has transgressed the bounds of good scholarship, as only challenges to religiously held beliefs can engender such distortions of a basic working theory. But what Kozlov fails to see is that Gumilev opens up a new opportunity actually to explain real behavior in terms more appropriate than the social determinism of Kozlov's school, or of the environmental determinists. In calling for a balance, Gumilev recognizes the value, far more than I would, of a Marxist model of the development of what the Soviets call social forms of organization, allowing for conscious change of a more constrained ethology encompassed by the social dimension of human behavior. But, on the other hand, we can now explain the rise and fall of ethnic groups at all scales within a more natural process of the biosphere and human evolution.

Finally, there are seven more points of criticism made by Kozlov against Gumilev, and these are more important to the theory of ethnogenesis beyond its ideological stance. First, Kozlov again accuses Gumilev of justifying unsavory behavior with his view of ethnic history . . . [that] justifies brutal conquests and bloody interethnic conflicts. How can anyone blame Genghis Khan [etc.] . . . [or] what's the point in talking about feudalist or capitalist systems, if the innate drive of such "heroes" was produced by biological mutations, and they and their supporters in conducting wars of conquest, simply followed the biological laws of development of . . . [their respective] ethnoses (1975:533). Kozlov is seemingly so incensed that he finishes his much longer discussion on this point by stating, "there is obviously no point in commenting about this kind of conclusion." Correspondingly, I have already criticized these points about inter-ethnic conflict, and shown what Gumilev means by innate drive under
these circumstances (i.e., the capacity for sacrifice, which can mean the passive resistance of Ghandi, or the storming of the Winter palace as much as the butchery by Mongol nomads on the rampage).

Second, Kozlov criticizes the "global ethnic" and "global socio-historical" character of Gumilev's concept, which trespasses on Kozlov's view of an ethnos as a limited social construct, by digressing beyond the purely ethnic theme, either in comparing the ethnic and social-class structure of society, or in characterizing the basic historical stages of ethnic development . . . [tending] to ignore the social-class factor in ethnic relations because he views the class "condition" as highly unstable compared with the ethnic condition, or as he would have it, the biogeographical (1975:533).

Third, the domain of the social-class represents to Kozlov the core of a Soviet Marxist analytical frame of reference, contrary to Gumilev's flexibility. Kozlov criticizes Gumilev for straying from that frame, because social classes are stable social groupings, with their distinctive ideology, etc. It is precisely this [sic. Gumilev's] notion of instability of the social-class structure that leads Gumilev to the determinant role of ethnic, or in his interpretation, biogeographical, factors in the life of society (1975:533).

Fourth, Kozlov criticizes Gumilev's (1973e) scheme of social life at various stages of historical development of the ethnos from the beginnings to the relic phase in terms of a single-valued measure: the imperative of the group vis-a-vis the individual (1975:534).

While calling this scheme "far-fetched," Kozlov seizes on what he considers the real point, [in] that Gumilev would have us believe that an ethnic community, having arisen under the impact of biophysic forces and following biogeographical laws of development, dictates to its members certain rules of behavior, demanding, for example, that for the sake of ethnic development a slave should remain a slave, a serf a serf, etc. A revolution or even a simple social protest against this class oppression that is likely to disturb this scheme of biogeographical evolution is thus made to appear unnatural and contrary to the "laws of nature," (1975:534).

This critique is so blatantly contradictory to what Gumilev actually intends and conveys in his model that I shall pass over commenting on it, and instead,
refer the reader to Gumilev's text (1973e:99), or the previous chapter.

Finally, Kozlov takes up some points on the actual historical data, criticizing Gumilev's description of ethnogenic processes in the 8th century in his discussion of ethnology and historical geography (1973d:77). Unfortunately, rather than challenge facts or provide counter examples, Kozlov merely states that, regarding Gumilev's view of the historical development of Western Europe during the middle ages, some aspects of medieval history, especially the origins of feudalism, are still being investigated by Soviet historians, but no one would seem to question that feudalism arose as a result of the disintegration of the slaveholding system of Antiquity and the process of disintegration of the communal system among the Germans and other tribes, yet according to Gumilev, it was all a matter of innate ethnic drive (1975:534).

After a lengthy quote from Gumilev's previously mentioned article, Kozlov seems only able to conclude that, "on the whole, this exposition of the history of medieval Western Europe would not stand up to criticism." Not claiming to be an authority on that historical period and place, I would assume that Kozlov's interpretation of the transition to feudalism would have an equally difficult time standing up to an intensive critique by scholars working on that period. But what Gumilev has proposed is not so much a general statement on the origins of feudalism as an exposition of the historical and geographical facts interpreted through a frame of reference that accounted for changes in social relationships through the rise and fall of certain ethnic groups and dominant strata in a dialectic between social and natural forces.

In conclusion, Kozlov has demonstrated nothing more than his dogmatic grasp of Soviet-style Marxist social theory, showing little historical acumen, and certainly no wit in his attack on Gumilev. In fact, it is hardly a critique, and rather than tackling each of the points raised, Kozlov circuitously criticized their methodological premises in a rather one-sided manner. Ending
this tirade, Kozlov (1975:535) can only condemn Gumilev's tendency toward geographical determinism . . . already evident in writings about nomadic societies, whose basic historical stages he explained in terms of climatic change . . . His later interest in history led to the formulation of the biological-geographical conception, whose methodological shortcomings are only partly concealed behind vividly written . . . word pictures of the life of the Chinese under Hunnic rule, the activities of Muhammed, who was endowed with innate drive . . . etc. Gumilev's articles were readily republished abroad . . . tending to give a distorted view of Soviet work in ethnic history . . . [which does] face important research problems, some of which lie on the boundary between geography, ecology and psychology. But Gumilev's approach not only does nothing to advance such investigations of the environmental impact on the socio-economic development of particular countries and peoples, but in fact interferes with a genuinely scientific resolution of these problems.

Thus ends Kozlov's critique. What he has done well is to demonstrate the documentary, pre-analytic skills of the historical method in giving an excellent short summary and exposition of Gumilev's conceptual framework. But he misused the method, ignoring much of Gumilev's methodology which either explained points raised by the criticisms, or offered reasonable alternatives. The value of this critique, then, lies in that it began a debate which culminated in the subsequent discussion of their differences during a seminar convened for that purpose the following year, and which is the topic of the next section in this thesis. As we shall see, the larger academic community validated Gumilev's experimental direction, and in general repudiated the narrow dogmatism of Kozlov's position.
CHAPTER XVIII

ON THE LENINGRAD UNIVERSITY SEMINAR:

A METHODOLOGICAL - PHILOSOPHICAL CRITIQUE OF GUMILEV'S ETHNO GEOGRAPHY

In the year following publication of Kozlov's critical article, "On a biological-geographical concept of ethnic history," that attempted to refute Gumilev's stance on a necessary parallel between biological and social components of ethnos, a major seminar was convened to discuss the issue. The meeting was held at the Geography Faculty of Leningrad University, and according to the report by O.A. Drozdov (1977:119),

the seminar was attended by more that a hundred persons ... aside from geographers, invitations had been extended to historians, philosophers and psychologists. A total of 15 persons took the floor.

As Soviet Geography editor T. Shabad noted, the results of the seminar were favorable to Gumilev, and "Kozlov did not appear to find wide support," for his attack on the theory put forward by Gumilev. In Shabad's words,

the consensus of the speakers was that Gumilev's model of ethnic development, treating mankind largely as a biological species and attributing the origins and disappearance of ethnic communities to biological factors, should be treated as a working hypothesis that still required experimental proof (Drozdov, 1977:119).

Despite an intellectual thaw developing during this period, the effect of Kozlov's attack on Gumilev, demonstrates the strains within Soviet academia.

It is encouraging, however, to find such a conclusion from the seminar.
According to the proceedings, the seminar began "with brief introductory remarks by Gumilev," which are not included. The geographer O. A. Drozdov of Leningrad University presided over the seminar and is credited as editor of the proceedings. First to take the floor was the historian Mavrodin of Leningrad, whose initial statement that "the need for contact between the humanities and geography needs to be emphasized at the very outset," fell short of its promise in his succeeding argument. Mavrodin claims to deal with the work of Gumilev from the perspective of a historian, [stating that] he is, of course, quite right to the extent that ethnos represents a community of people, i.e. of living organisms that are subject to all the laws of genesis, evolution and death of living organisms. Man is affected by the laws of gravitation and heredity, chemical reactions and physical phenomena . . . but more than that is involved in the study of ethnos (1977:120).

Giving the example of classifying Napoleon by his biophysical characteristics, i.e., blood group, weight, etc., Mavrodin finds that "all these data despite their objectivity cannot satisfy the historian." Comparison of two sets of terms, first those used in a standard introduction to ethnography (author cited only by initials R.F.) and second, those "concepts advanced by Gumilev," makes us realize that Gumilev has moved the study of ethnos from the field of the humanities to the natural sciences . . . [and] berates the humanities in the area of ethnogenesis for not having provided a concise formulation for the concept of ethnos . . . [but] arguments around that concept . . . have been on a particular plane rather than attempts to compare the noncomparable, as Gumilev has been doing . . . we and Gumilev speak different languages . . . (1977:120).

The recognition of contact between the two disciplines in Mavrodin's introduction seems counterbalanced by his recognition of fundamental differences in discourse, leading to a pessimism in which he states his "doubt that today's seminar is going to produce a genuine discussion." Given the non-substantative discussion of Gumilev's work in Kozlov's article, his mood may be a clue to the problems involved in breaking through both disciplinary and ideological barriers between an arch conservative orthodoxy and innovative thinkers.
We next hear from Gadlo, another Leningrad university historian, who finds Gumilev "wrong in saying that there is no definition of the concept ethnos," citing "a comprehensive definition . . . provided in 1923 by S. M. Shirokogorov, the ethnographer," and followed by Bromley's (1973) revision. He states their definitions, beginning with Shirokogorov then Bromley (1973:37):

ethnos as a group of people speaking a common language, acknowledging a common origin and distinguished by a set of mores and a way of life that are preserved and hallowed through tradition and distinguish the particular group from others . . . ethnos is a historically shaped community of people endowed with relatively stable common characteristics of culture, including language, and psyche and consciousness of their unity in contrast to other communities (1977:120).

Contrasting these definitions to those of Gumilev, Gadlo finds that

Gumilev's conception is based on another interpretation [as] he stresses that ethnos is a form of existence of the species Homo sapiens, that it represents a group of individuals distinctive from other similar groups, we and they, and the evolution of ethnoses, in contrast to social development is discrete, and so forth . . . [he] puts the emphasis on the biological aspect of the evolution of human communities, and then uses it to explain many historical facts. We cannot agree with such an approach (1977:120-21).

Turning to a second point, Gadlo takes issue with "the meaning of ethnogenesis," claiming that it "is an outdated term reflecting the metaphysical interpretation of history." Thus,

a people has a long history, it does not just suddenly appear on the scene. When we say that we are investigating the problem of ethnos, we artificially distinguish for research purposes a particular stage in the history of a people, arbitrarily viewing that stage as the initial stage and calling that period ethnogenesis. In Soviet historical science, the term is usually applied to the formation of a feudal people or nation. The formation of an ethnos involves several processes -- assimilation, integration, consolidation. This represents a long stage in the life of a people (1977:121).

We have now encountered another variant on the problem of ethnos, as Gadlo has introduced the notion that it is applicable only to a particular stage of the historical development of a group of people and artificially distinguished from an ongoing process. Though we have not as yet reached the
stage of four blind men and an elephant, in the "what is ethnos" game, certainly the more deeply entrenched doctrines of Soviet Marxism do present a blindfold to any new interpretation of the subject. An analogy may be made to the American school (Moynihan and Glazer, 1975) which, though far less rigid in a formalistic philosophical method, does present an ideological view of ethnos paralleling the Marxist social determinism, and have built a paradigmatic discourse limiting the discussion of ethnos to a conscious social phenomenon.

Yet with all due respect to Soviet colleagues, the "free market" system of ideas which prevails in bourgeois society allows their American counterparts a much greater leeway in exploring new ideas with much less personal risk.

Returning to Gadlo's critique, we find that he now contrasts Gumilev's concepts to his view of ethnos within the afore stated limits, and primarily finds problems with the concept of innate drive. In Gadlo's words,

Gumilev contends that ethnogenesis is a natural energetic process that originates sometimes and only in some parts of the world under the impact of a burst of innate drive. We find it difficult to accept the whole notion of innate drive . . . [and] are not in a position to take issue with biological phenomena, such as mutations, but the historical phenomena which Gumilev is explaining in terms of his ethnogenesis model as having been caused by energetic and biological factors have, in our view social and economic rather than biological causes (1977:121).

Gadlo (1977:121) raises another point of contention concerning Gumilev's proposal to create a distinctive discipline of ethnology that would encompass the social, cultural, geographical and ethnogenetic aspects of ethnic history, ethnic diagnostics, ethnos-nature relations and ethnogenesis as the occasional process that initiates ethnic history.

His primary criticism here seems aimed at Gumilev's suggested transition towards a study of human behavior through natural science at the expense of a particular type of social science bounded by an ideology protecting its operational significance. As Gadlo (1977:121) puts it,

there have been many suggestions regarding the creation of ethnology as a theoretical discipline in contrast to ethnography as a purely
descriptive science, but they have all been rejected. Soviet ethnography encompasses descriptive, theoretical and research approaches. There is no need to break up the living logic of a science.

In conclusion, Gadlo, as the second person and historian to speak, also

cannot accept Gumilev's conception as a whole because it is based, in
our view, on the false premise of the biological nature of ethnos and
on the imprecise use of the concept ethnogenesis (1977:121).

Again, the opposition is mainly in terms of Gumilev's deviations from what is
assumed to be appropriate ideological and disciplinary spheres of inquiry.

Taking a step in the other direction, the next speaker is the philoso-
pher Parygin of the Herzen Pedagogical Institute, who finds that Gumilev
offered a convincing rebuttal to Kozlov's criticism (but that) there are some
vulnerable aspects in Gumilev's position and that of his opponents. "He first
gives an example of Gumilev's vulnerability

in his defining ethnos as a group of individuals. [As] such a formu-
lation tends to make ethnos a purely biological category... [which]
conflicts with [his] own position... that ethnos is neither a pur-
ely biological nor a purely social phenomenon... [his] unjustified
emphasis on a biological definition thus contradicts his concrete anal-
ysis of that phenomenon and its structure and dynamics... [as
he] certainly does not treat it as a biological phenomenon, but rath-
er as... a stereotype of their daily behavior (1977:121-22).

But, in keeping an even hand in his critique, Parygin disagrees with some of
Gadlo's (1977:122) criticisms

directed at Gumilev with regard to the definition of ethnos, [as]
such a definition does not necessarily have to include elements ref-
erring to [1] linguistic communality as an essential feature of eth-
nos; [2] a high degree of historical stability of the process of eth-
nic formation, and [3] the mechanism of the process of ethnogenesis.
Each of these aspects, even though not an essential feature of ethnos
as a phenomenon, may be the subject of separate investigation.

Parygin also finds Gumilev right on several other points: first of all,

with regard to the relatively dynamic and contradictory character of
ethnogenesis as a process, which may involve both integration and
disintegration, both surges and declines, down to the total defor-
mation and annihilation of an ethnos (1977:122).

Secondly, referring to his own work (Obshchestvennoye nastroyeniye [The Public
Mood], 1966), which discusses "the significance of the psychic state as a factor in human activity affecting the course of the historical process."

Parygin finds that,

Gumilev's conception, which might be viewed as a scientific hypothesis, allots an important role to the phenomenon of innate drive, [and] in our view deserves attention to the extent to which it represents a real, concretely historical psychic condition and the psychic state of particular human communities . . . [and thus, he] views innate drive as a stable quality that characterizes the psychic state of both an individual and various communities (1977:122).

In concluding this assessment of the significance of the psychic affect, Parygin finds several problems: First,

unfortunately, Gumilev fails to clarify the role played by the biological factor, especially the biosphere and mutations, in the process of shaping a particular psychic state in the ethnos (1977:122).

This criticism is apt, as it probably represents a weak link in Gumilev's argument, due to the lack of a more amplified treatment, which would have required him to go deeper into contemporary behavioral, (not behavioralist), primate social psychology and ethology, as well as the kind of micro level studies in neuro-anatomy and physiology, or interactional rhythms which I have mentioned earlier (cf.: Eibl-Eibesfeldt, 1970; Hall, 1984; Turner, 1986a).

But the second problem raised by Parygin again confronts the role of the social paradigm in Gumilev's formulation of an ethnogenic theory, thus,

when it comes to the parallel drawn by Gumilev between ethnogenesis and social processes, we find it totally unconvincing. His overall concept becomes most vulnerable when he tries to view ethnos and ethnogenesis as a purely biological phenomenon independent of the process of sociogenesis. It would have been better to speak of ethnos as a socio-psychological phenomenon that is endowed with a dual and somewhat contradictory character by being, in effect, bi-social in nature. In that case, Gumilev might have been more convincing in talking of innate drive in connection with the Renaissance or various historical figures (1977:122).

This might be seen as good advice to Gumilev, who would then stand a better chance of explaining what he has attempted to do, present ethnogenesis as an
integer of the social within a biological equation. In fact, there is a strong correlation between ethno genesis and sociogenesis that Gumilev has avoided by recourse to an insufficient concept of an unconnected, but interacting, parallelism. Perhaps the issue of sociogenesis and the preset stage model of Marxist sociology along with a more rigid and dogmatic insistence on the division of social and biological categories than is found outside of the Soviet intellectual sphere, combine to inhibit Gumilev from stepping further up on the tiger's tail. In conclusion, however, Parygin, supports the academic right of Gumilev to pursue his research as an indispensable part of the scientific project, stating that no matter how vulnerable, any scientific model has the right to exist, to establish itself and to develop through controversy, even if it is in such an "aggressive" environment as the dialogue in this seminar. It seems to me that, for this point of view, Gumilev's work represents a serious, original investigation that offers an interesting hypothesis and should be presented to the general reading public on a sufficiently soundly based foundation (1977:122).

Following this supportive statement, the next speaker, Svarichevska-ya, of the Leningrad geography faculty, expressed the satisfaction of geographers with Gumilev's work, and stressed the importance of historical-geographic problems . . . [and] she noted in particular, the value of his historical-geographic study of the Khazars in the Caspian Sea area and said that the climatic fluctuations used by Gumilev to explain some of aspects of Khazar history did indeed occur (1977:122-23).

Then Ivanov, another geographer from Leningrad, likewise spoke in regards to the role of climate and natural environment in correspondence to human events. First urging a more open view towards the ecological problems, and the necessity of supporting research in what we would consider human ecology, Ivanov (1977:123) stated that any amelioration of the environment must consider not only the complex linkages within the earth's physical-geographical shell, but also linkages between living organisms. [And] if we want to prevent
a negative impact on landscape and the geographical shell as a whole, we must investigate the relationship between man and his natural habitat. The man-nature relationship thus remains a timely subject of investigation, and even assumes increasing significance with the growth of production. Therefore, any investigations on the boundary between social problems and geography assume particular importance.

Ivanov's second point both involves Gumilev's unique methodological approach and refers to his earlier positivist statements as to the predictive value derived from a solid ethnological history, grounded in the natural sciences.

Ivanov (1977:123) finds that

Gumilev's work on ethnogenesis and other aspects strikes me as being important because it contains a vast array of facts and generalizations about man-nature interaction in the past. His work is of special value in view of the fact that we are now trying to predict the future evolution of the man-nature relationship. Any generalized experience that seeks to integrate the impact of the environment on man is therefore very important. From this point of view, we physical geographers find that Gumilev has made an important contribution.

Changing the pace, an avowedly interdisciplinary speaker took the floor, as Zherebova of the Philosophy Faculty of Institute for Social Science Teachers defined herself as "a historian by training, a philosopher by profession, and a social psychologist by avocation, so that my comments will be on the boundary between these three disciplines." Zherebova then took up several points, beginning with what we might view as academic freedom and Gumilev's contribution to an important grey area that has been overlooked in the margins between disciplines. Zherebova (1977:123) then states that

first of all . . . hypotheses have a right to exist as one of the methods of thought. Science would not be able to advance without hypotheses. What Gumilev has had to say strikes me as very interesting and as quite useful for many branches of knowledge . . . [avoiding] the fine points of history because there is no point in arguing with Gumilev. . . . I would like to dwell on some of the propositions that lie in the boundary area of philosophy, social psychology and geography. The question of defining ethnos is a very complex one, and we certainly suffer from a gap in the history of ethnic investigations. Gumilev has proposed an interesting historical interpretation of the evolution of ethnos. He makes the point that a more rigorous definition is needed. I would say that his interesting hypothesis also requires a rigorous conceptual apparatus.
From this premise, Zherebova then picked up on what she saw as a weakness in the conceptual apparatus of Gumilev's theory, criticizing what I earlier commented upon as the unnecessary problem created by maintaining an artificial division between the social and geographical factors as independent systems. Her point, however, again follows the social determinist line, albeit not as strongly as other critics, stating that

I don't see any point . . . in stressing the parallel between the social and ethnical strands in the evolution of society. The accent should be put on the fact that human activity, communication and language, as a means of transmitting information needed for the creation of a community, are all the product of social man (1977:123).

The second point raised by Zherebova regards Gumilev's theory of innate drive, which seems generally to present a problem, she stated that

of course, a great deal still remains a mystery, but the hypothesis is an interesting one. It is sometimes difficult to explain the surges of human emotions that prevent history from following a straight-line development. The basic evolution of human society we tend to explain from the Marxist point of view of modes of production. But history is made by people, and the subjective factor leaves its imprint on the course of world events. This is true of many socio-psychological factors as well as what Gumilev terms surges of innate drive. There are facts in history that we cannot explain simply in terms of productive forces, for example, the great migrations. There are no doubt many causes for such phenomena and the answer may not be totally unambiguous, but Gumilev does shed light on such phenomena as infections, imitation, etc. (1977:124).

Zherebova does conclude, however, that work such as Gumilev's needs discussion, "especially when it touches other disciplines."

The following speaker, V. V. Leonovich of the Department of Marxist-Leninist studies at the Leningrad Medical Institute focused, in her words, on the problem of biological-social relationships at the supra-individual level and the methodology of studying man from the point of view of the natural sciences on the study of man (1977:124).

Leonovich's position is very interesting as she took up the issue of social determinism, questioning its absolute hegemony under present historical and scientific conditions, stating that,
in Soviet science there has been a tendency to stress the social aspects of man. That approach is quite justified in principle, but at the present time, in connection with the scientific and technical revolution, the biological nature of man and mankind is beginning to be of interest not only to natural scientists, but also to philosophers. At a time where there is talk of crisis in the relationship with the biosphere, the problem of the relationship between the biological and the social has assumed new interest. We cannot limit ourself simply to saying that the social factor is predominant (1977:124).

Here we find the most significant challenge to the predominance of the social factor to which all the preceding non-geographer, discussants have clung with varying degrees of emphasis. Leonovich has now opened the discussion to a level in which Gumilev's concepts can be evaluated on their scientific or intellectual merits as opposed to being viewed through an ideological filter. But she continues to pose a fundamental challenge to the seminar to address the seriousness of the contemporary human condition within the world of nature and the need to be able to pursue all paths of research to find solutions, stating:

The whole phenomenon of man represents a unity of two systems, the organism as a biological system and the personality as a social system. Man's psyche is an area in which both systems are superimposed on one another and cannot exist without each other. When a disturbance in the biological system affects the psychic sphere, the brain, we can no longer speak of the wholeness of man. Nor can mankind be viewed simply as a social phenomenon, as society; the history of mankind at every stage also has to be considered on a biological level, that of population (1977:124).

Within this frame of reference, Leonovich now is able to place Gumilev's ideas in a perspective that enables a more balanced critique, as she concludes:

there is considerable value in Gumilev's attempt to look at history from a new point of view and to examine those aspects that derive from the biological nature of man and from the impact of the biological environment. There may be some argument about the author's conclusions, but the approach is certainly quite legitimate. The first attempt always strikes everyone as strange. For the natural scientists, there is a strangeness in Gumilev's "humanitarian" approach, especially since most of them are familiar with history solely from their high-school course and from popular literature; for the social scientists, there is strangeness in Gumilev's use of the findings of the natural sciences and of biogeography. It seems to me that the present stage in the study of man forces social scientists and natural scientists to find a common language. If there was any
value in today's discussion, it was precisely to focus attention on the need for mutual understanding (1977:124).

Following this astute critic, G.K. Lamagin of Leningrad university reminded the participants not to forget that, in his words (1977:125), humanity is also a biological species [and] the social laws of development of society do not rule out the impact of biological laws, just as one might . . . investi\,gate the relationship between biological man and the environment since mankind is both a biological species and a social organism. And yet there is a real need for such an approach if we want to avoid the theoretical onesidedness and practical harm that might result from ignoring or denying the fact that man is subject not only to social laws but also to general laws of evolution.

Lamagin goes on to suggest how such an approach might develop, then sounds a note of caution concerning limitations inherent in Gumilev's concept, thus:

methodologically, such an investigation might begin by disregarding concrete modes of production. Such an abstraction is justified on the ground that the rhythm of biological change in mankind differs substantially from the rhythm of social development. Such an approach might make it easier to deal specifically with the mechanism of the man-nature interaction (1977:125).

Following this suggestion, Lamagin finds weakness in Gumilev's method, in that he has attempted to simplify and abstract a model to the point of losing its strength and being overly ambiguous, concluding that the investigator cannot totally ignore the social aspects that he discards at first to simplify his task. We cannot say, as Gumilev does, that ethnos is a systemic formation between the biological and the social. His hypothesis of ethnogenesis, including the decisive role played by energetic processes and innate drive, strikes us altogether as too abstract; modern science is in no position either to confirm or reject it. His conception would have to be more rigorously founded from the logical-methodological point of view, and the conceptual apparatus needs more careful elaboration (1977:125).

At this point, I find it slightly odd that no speaker has expressed a familiarity with any of the more experimental biological research in the Soviet union, especially with regard to biorhythms. Here, the connection between biological factors affecting human behavior and social patterns of work has been well researched and experiments concluded to adjust human behavioral
patterns in relation to attaining more productivity and social integration of workers in extreme climates and latitudes, working under conditions of artificial environments. There have also been a wide range of studies conducted on potential impacts of biological rhythms on the social behavior of Soviet cosmonauts. My only slight confusion on this issue is that in a much more information saturated world of Western academia, few social scientists know or bother to study the biological research in behavior, despite copious literature and research conducted over the past generation. I must conclude that, aside from the particular case of a Soviet Marxist ideological preference for sociological determinism, this same bias towards an ultimately idealist position of attributing more than a fair share of human behavior to the conscious, intentional "mind" of the individual and its transfer to the social aggregate, unabashedly dominates contemporary social science.

Another philosopher, T. V. Kholostova, of Leningrad University, taking the floor, comments on the controversial matter of "the relationship between natural and social factors," warning Kozlov that any new hypotheses are not only possible, but necessary for the development of the social sciences, and once we accept this, then any hasty attempt to levy charges of racism, geopolitics, Freudianism, etc. . . . simply suggests failure to understand the complexity of the problem and to resort to cheap criticism instead of genuine scientific debate (1977:125).

Kholostova's second point supports the ideological correctness of Gumilev's propositions regarding the role of geographical conditions especially landscape, in the shaping and development of social communities [that] are not in conflict with the principles of historical materialism . . . [which] contends that neither geographical conditions nor demographic changes are the determining factor a given geographical environment can have a significant impact on social development. It should also be pointed out that geographers studying the man-nature relationship have not been making much contribution to the theory of social development. Little work is being done on the concrete forms of environmental impacts (1977:125).

Kholostova has three more points to make, the first of which concerns the
simultaneous co-existence of all forms of social and ecological modes of production, as she states that

We must clearly understand the scope and the importance of the stated problem. At the present time, virtually all modes of production are represented among the various peoples of the earth. It may be paradoxical, but it is a fact, that almost the entire history of mankind is now represented in the form of coexisting social conditions . . . the economic factor alone will not explain this coexistence; we need to investigate the conditions, especially the natural conditions, under which these peoples exist (1977:125-26).

Here, Kholostova turns to Gumilev's concept of how ethnic formations arise at certain periods and places, while others continue to co-exist in different stages of their particular ethnogenes, Kholostova (1977:126) finds that

Gumilev as a historian and a geographer -- a very useful combination in our particular case -- suggests that there is a certain "clustering" and "ridgeing" in the surges of social evolution at particular stages in human history. Since the fact itself is not disputed by historians, we need to find some theoretical explanation. Gumilev's propositions regarding the influence of landscape and the phenomenon of innate drive represent a first hypothesis explaining those facts, and as such requires wide discussion, which can be generated only through publication of his work. Publication is all the more necessary because the phenomenon of innate drive differs from mutations, and this is a matter for biologists requiring critical review.

Though supporting the basic concept, Kholostova expresses some reservation about the same issue that troubled the others, the nature of innate drive, and while not extending a wholehearted endorsement, she concludes that,

in our view, the notion of innate drive still contains a great deal of ambiguity. For example, we are not clear about the causes of the mutations that are supposed to explain the surges and the stagnancy in the life of peoples. We are also dubious about interpreting ethnos as a purely natural phenomenon; it seems to us that the social factor is simply too strong and pervasive. But regardless of any doubts we might have, Gumilev's hypothesis deserves serious examination by scholars concerned with the problem (1977:126).

Before the last two speakers are heard, O. A. Drozdov, in his capacity as presiding over the seminar notes, a problem about achieving mutual understanding in the discussion. The argument is often not to the point . . . [and] some of the blame must be borne by the author (Gumilev) for failing to present a syste-
matic statement of all aspects of the problem. The historians here have been stressing the continuity of the processes of ethnogenesis. Gumilev, on the other hand, breaks the process down into segments corresponding to surges of innate drive. The argument about the meaning of ethnos should therefore focus on whether there are such things as surges of innate drive and what causes them. Since the origin of such a phenomenon is not clear, we should try to formulate some objective criteria for testing the existence of such a phenomenon and its relation to particular phases of ethnogenesis, at least statistically (1977:126).

While directing the remaining discussion to what may have been its original purpose, Drozdov has raised new questions that, possibly to his frustration, are pertinent but have been avoided by the speakers. He continues to raise the following questions and suggest discussion along those lines, thus:

What is supposed to cause such surges of ethnic energy? It is certainly not clear whether this process is biological, or solely biological, and even if it is, it cannot be due to mutations. Mutations are a random factor in evolution, and are perpetuated only on the basis of natural selection. Why should the process of natural selection foster the appearance of individuals "possessed" with innate drive, rather than, say, self-seekers or scoundrels. If we are to look for the roots of this phenomenon in biology, we would probably have to seek the causes of such surges of ethnic hyperactivity in outside influences. We know, for example, that chemical, radioactive and electromagnetic influences can affect the psyche. Furthermore, there may be social factors that help produce the kind of surge that Gumilev associates with ethnogenesis. At any rate, for a discussion to be productive, we need to have a clearer idea of the objective phenomena and processes involved as well as a rigorous statement of evidence that would support the hypothesis at the exclusion of other explanations (1977:126).

This rather long quote may be invaluable in assessing the potential within Gumilev's theory, even given Drozdov's dismissal of Gumilev's reliance on mutation as the sole cause for these observable events. Furthermore, Drozdov suggests a more open ended hypothesis, one that incorporates a multivariate causation. By investigating interactions we can view convergences through collecting data that represent different phenomena existing at the places and times where ethnogenesis occurs.
Before the final points and Drozdov's concluding remarks, Gadlo again enters the discussion, commenting that historians on the whole were satisfied with the discussion. It demonstrated that Gumilev's hypothesis is relevant to the current interest in the relationship between social and biological phenomena. However, we are not satisfied with the terminological ambiguity in which the hypothesis is couched, and feel that it obscures the phenomena it seeks to describe and explain . . . [but] there is certainly a need for closer contact with the natural sciences, and . . . even though I am not persuaded by Gumilev's hypothesis, we welcome his work along these lines and would be pleased if it were backed up with proof from the point of view of geography, biology, psychology and, especially, history (1977:127).

Certainly, Gadlo follows Drozdov's call for more empirical work and echoes the majority of speakers in seeking a clearer exposition of the terms and their relationships to demonstratable phenomena, although still opposing the trend towards a stronger support for Gumilev.

The final speaker, another Leningrad University philosopher, D. A. Gushchin, not only has the final word, but a rather profound approach to the problems involved in this discussion: first, Gumilev's theory; second, those of social determinism; thirdly, the necessity of more deeply investigating the interaction between natural and social phenomena. Gushchin begins by restating Gumilev's theory of ethnogenesis and commenting on how it fits within the Marxist paradigm. As Gushkin (1977:127) refers to Gumilev's words, regarding ethnogenesis -- namely that certain natural, possibly cosmic, phenomena give rise to certain regional and temporal changes, micromutations, which in turn, through a particular psychological state, innate drive, result in intensified activity of a particular ethnos -- are not in conflict with the principles of Marxist philosophy, either in the area of dialectical materialism or in the area of historical materialism. Gumilev's approach can be regarded as a working hypothesis that seeks to explain a set of historical facts, including those mentioned in the discussion as well as others.

As simplicity has its own virtues, Gushchin's modest approach seems like an absolution for Gumilev. With this scholarly approach, Gushchin now takes on the problem which he has dismissed for Gumilev, but which still remains for the
general participants and particularly for the camp of historians sitting around their confessional fire; to this end he directs these next comments:

it would be quite a different story if the historians were to announce that there were no such historical facts or the facts were determined entirely by socio-economic factors, or if the biologists were to declare that there never were and could not be the kind of biological changes that Gumilev is referring to. In other words, one might argue with Gumilev on a concrete scientific basis. But the attempt of the historian Kozlov to criticize Gumilev's work in the name of Marxist philosophy cannot be regarded as sound. He did not get the support of a single speaker in this seminar (1977:127).

Identifying the problem as arguing around an issue instead of facing it directly, Gushchin now gives a lesson in dialectics applied to the problem facing the historians, stating that

it may not be surprising that the historians, being concerned with strictly social issues, have difficulty accepting Gumilev's efforts to view social elements from a "geobiological" perspective, or that the philosophers, whose professional interests encompass a search both for qualitative distinctiveness and for common features in the various forms of motion of matter, should favor a complex, systematic, integrating approach to the problem. The dialectic requires universally mutual causation, including the biological and the social. There are no insuperable boundaries in nature (1977:127).

Regarding where the ideal of overcoming any natural boundaries might lead us in thinking about the issues raised by Gumilev, Gushchin suggests:

the social nature of man constitutes his highest quality, distinguishing him from animals. The highest includes the lowest. But to include does not mean to exhaust. Nor does it mean to annihilate. An investigation of the biological aspects of man is entirely legitimate. We should not deny, but investigate the impact of the lower on the higher quality; we should not deny the biological elements in man, but rather investigate the interaction between the biological and the social. The structure of deoxyribonucleic acid, DNA, and mutations are biological phenomena. But changes in the structure of various segments of DNA in the cell, giving life to a new human being, have obvious social consequences, which may be negative or, more rarely, positive (1977:127).

After proposing the potential for viewing biological and social interaction in a manner mutually instructive to specialists in both areas, Gushchin's concluding comments illustrate the necessity of collaborative work, or learning from
each other's research fields, with the example of Gumilev's theory, and its limitations. As he gently chides both sides in the dispute,

I doubt that there is anyone nowadays who, for the sake of social determinism, would ignore the findings of genetics, biochemistry and biophysics, even through that was unfortunately the case not so long ago. A total rejection of the role of biological and geographical factors in social development would be just as wrong as to make them absolute (1977:127).

Turning now to those problems in the methodology and structure of Gumilev's theory which have not been resolved, and have been apparent to those in this seminar, Gushchin states that despite his preceding comments, this does not mean that I share Gumilev's point of view and regard all his statements as true or demonstrated. There are some propositions with which I cannot agree. For example, mutations are a random process, and it strikes me as highly dubious to allow for massive mutations all working in the same direction of producing innate ethnic drive. Gumilev's work and his presentation at this seminar contains inaccuracies and internal contradictions. It also seems to me that he is somewhat one-sided in his approach and that his work would be more credible if he were to consider the socio-economic factor in the origin of ethnos and would adopt a complex, systemic approach to the study of ethnos (1977:127).

Gushchin's suggestion neatly sums up the reservations seemingly shared by supporters of Gumilev's work. It also sensibly follows Drozdov's call for a broad, yet integrative approach in working towards a synthesis of the forms of motion of matter which, according to Gumilev, actually exist within the human organism. The problem seems to be that Gumilev, having proposed that all these forms converge within each individual member of the species, both made a special case for certain individuals endowed with innate drive through a rather vague mutation, and did not consistently demonstrate
this convergence in the overall operations of his model at all levels. Then, in his closing remarks, Gushchin points out a weakness in the seminar in that it was predominantly attended by social scientists. The discussion, he suggests, needs to be carried further into the scientific fields concerned with specific issues within Gumilev's general model. Then, within the overall construct, specialists in those fields could refine and develop problem issues their areas, proving or disproving the parts in relation to the whole. But, as he clearly states here, judgement is for the wider scientific community, and as Gushchin (1977:127) concludes, it is not for historians or for philosophers to judge whether there is a sound basis for Gumilev's conception. This is a matter for physicists and biologists, psychologists and geographers. Are there really biological mechanisms capable of converting physical influences into the psychological state called innate drive? If experimental physical-chemical, biological and psychological data were to confirm the hypothesis, which now rests on historical-geographical evidence, it would become theory. For the time being, however, Gumilev's conception remains a hypothesis which has a right to exist not only in the form of ideas, but in published form.

Stated in a tone of gentle firmness, the suggestion was for Gumilev to "keep at the drawing board," and to continue refining and testing his model, preferably in conjunction with specialists, more hard scientific data and theories corresponding to areas of significance to questionable factors within his thesis.

I might add to Gushchin's assessment, that this unease with a lack of references to research in the fields from which Gumilev has drawn terminology and general theoretical statements has concerned me from the beginning of this project. From investigating and analysing this massive work that he has assembled throughout years of research and writing, I have developed an admiration for his tenacity, which has only been heightened with an intuitive empathy for his position of having to respond to such "cheap shots" as Kozlov delivered, and to the ordeal of what must have been an extremely lengthy and tense
seminar. But after his years of prison, exile and battle front experience, this son of poets proves to be a tenacious fighter, no less stubborn and spirited than either his parents, or his intellectual forbears. There is a bit of the romantic in Gumilev’s exposition of the broad sweep of human ethnology, and a touch of the spiritual in carrying on Vernadskiy’s visions of the biosphere, as a transcendant emergence of “being human,” of the growing wisdom of the species H. sapien. But, as Vernadskiy’s forward-looking “noosphere” must be grounded in the terra firma and its thin skin of the biosphere out of which the anthroposphere must first grow in its own anthropogenesis, and then like the ethnos, survive both external and internal dangers, Gumilev’s concept of ethnogenesis must be constructed out of a firm foundation of empirical data from experimental as well as descriptive sources.

There is, I feel, a further and significant connection between Gumilev’s concepts and those of Vernadskiy concerning the evolutionary process, and the role of energetic forces in shaping human experience and behavior. Conversely, if the increasing cephalization of life and zoological organisms leads towards the noosphere, it is the energetic production, or refraction and amplification of these external energies through the human nervous system that contributes this emergent property to constructing the next level of the system. Somewhere in this evolving equation lies a niche for the “Gaia” hypothesis of Lovelock and Margoulis which fits between the Noosphere envisioned by Vernadskiy and its more metaphysical offspring imagined by Le Roy and Teilhard de Chardin. Again, Gumilev’s work stands between the paleo-archeology of Teilhard and the materialist biology of Vernadskiy, with a healthy dose of traditional Russian fascination with ethnography and exploration, especially of the vast steppe to their East. The relation between the steppe frontier and the frontier of knowledge has long been a theme in the way in which mother Russia has
raised her sons and spun her poetry, from Kropotkin to Gumilev. As Drozdov closed "this seminar, which was conducted on a fairly high level of discussion," his rather peripatetic concluding words hopefully indicate that it undoubtedly served to focus the attention of the participants on complex problems not only in geographical science proper, but also in adjacent areas of knowledge (1977:127).

This concludes the critiques of Gumilev's work, except for my own final assessment which, preceded only a review of a recent (1980) article by Gumilev on the Russian ethnogenesis at the battle of Kulikovo, will conclude this thesis.
CHAPTER XIX

ON GUMILEV'S RESPONSES TO THE DEBATE:

THE GREATER RUSSIAN ETHNOGENESIS

Before concluding this assessment of Gumilev's theory, we should take a look at his article on the rise of the Greater Russian Ethnos: published in 1980 by Ogonek, and translated by Soviet Geography in the same year; a full three years after the "Critical Seminar," and seven years after the last of the Landscape and Ethnos series. Its importance at this point in the thesis is to evaluate his most recently available work, and to assess whether his work has incorporated any aspects of the criticisms and suggestions from the seminar, especially suggestions from Drozdov and Gushchin regarding method and data. In addition, it would be interesting to see if any major changes can be detected.

On The Continuing Debate over Ethnos as Physical Geography

Before launching into the assessment of Gumilev's most recent work, the reader must be advised that it is quite historical in its approach and data. But first, a brief comment regarding a short note from Gumilev (published in 1973, both in IVGO and Sov. Geo.) where he clarifies a point on which he was misquoted. This reference refers to V. A. Anuchin's (1972) book, Theoretical Foundations of Geography, where Gumilev is quoted in regard to a dispute over S. V. Kalesnik's theory of regional geography. Obviously a continuation
of Anuchin's (1960/1977) earlier work, *Theoretical Problems in Geography*, this book has not as yet been translated into English. As is often the case, it may never be translated unless it becomes a well funded project of dedicated senior scholars (n.b., Anuchin's (1960) work did not appear in an English translation until 1977, and only then through the concerted efforts of senior American scholars such as Shabad, Fuchs, Demko and Hooson).

Though Anuchin's debate with Kalesnik was evident in his earlier work (1960/1977), it made no reference to Gumilev, who supports the latter's position. But in the issue discussed here, Anuchin (1977:283) quotes Gumilev's article "On the term Ethnos." And while the point raised by Gumilev stems from a mistaken citation to where his article was published, he takes the opportunity to reenter the continuing debate over "unified" geography. Likewise, Gumilev again sides with Kalesnik and the physical geographers against Anuchin's approach, now identified as "social determinist." To begin, Gumilev cites Anuchin's response to Kalesnik, who proposed that

society is the name given to the totality of the productive relationships of people, and these relationships are not shaped by either the ordinary or the elemental phenomena of nature (1973:376).

Next Gumilev (1973:376) cites the passage in which Anuchin states,

As L. N. Gumilev properly notes, all of mankind represents a diversity of ethnoses just as the earth's nature consists of a diversity of landscapes. And the ethnic peculiarities are initially formed in the process of the man-nature relationship.

Gumilev (1973:376) then replies to Anuchin's citation, stating that

Anuchin arbitrarily equates ethnoses with societies, i.e. with the social form of motion of matter. Gumilev has consistently argued that he does not equate ethnoses with societies, but with biological communities, a sort of anthropocenoses, interacting constantly with the social form of motion of matter. And in order to interact with anything else, you have to be outside of it. Where the boundary between the natural and the social is to run is quite another issue. According to Gumilev, that boundary lies within the human body. Anatomy, physiology, reflexology, the genetic code -- all these are not social, but biological, biochemical and even biophysical.
This statement succinctly argues for a natural science of man. Such an approach would take into consideration the fact that the conscious individual is a social abstraction, aggregated to various levels of organization where symbolic structures of meaning predominate, and the presumed intent is expressed in individual social behavior. But in recognizing this "other form" which interacts with the natural human organism, Gumilev notes that,

on the other hand, the character of development of productive relationships, political needs, ethnic and esthetic ideals, in Gumilev's view, cannot be reduced to biological and geographical factors, but represent the fruit of the social conscience. Consequently we find within each person individually and within each human group that natural and social forms of motion of matter exist side-by-side. It follows that the concept of ethnos formulated and justified by Gumilev fits totally within the conceptual framework of Kalesnik and is fundamentally contrary both to a "unified geography and to an all-encompassing sociology, such as has been proposed by V. I. Kozlov, (Kozlov and Pokshishevshiy, 1973), who considers ethnos to be a social category (1977:376).

With a final articulation of the dialectic between the biological and cognitive processes interacting within the socialized individual, Gumilev has appeased the proponents of each determinism, while probably pleasing neither.

At this juncture, I will briefly sketch out some of my conclusions based on comments woven throughout this text. I have saved for the final section, however, a summary of these critical points and comments on Gumilev's project, a final assessment, and examples of other relevant lines of allied research and further investigation. Nevertheless, this initial evaluation is intended to dispell any Marxist or other concepts of a duality in human nature. Instead, I would hope that from the preceding argument throughout this thesis we could agree on the concept that an interaction between conscious and subconscious behavior is embodied within each individual organism, and is developed through those communicative and exchange relationships. Again, I must express a strong intuition or impression that we are standing on the edge of a larger
evolutionary theory of the biological basis of both individual and collective consciousness suggested by Vernadskiy and Teilhard among others. But as these shadowy ideas both fall outside of the bounds of this thesis and remain as yet unclear, they simply embellish the text in the manner of the flourish on the initial capital of an illuminated manuscript. Let us now return to Gumilev and see how he handles such a construct, which he has already established, when confronting an empirical situation involving the genesis of his own ethnos.

On the Greater Russian Ethnogenesis: the Battle of Kulikovo Pole

This review of Gumilev's most recently available work takes up but little space within the whole thesis, but acts as a suitable introduction to my conclusions on Gumilev's overall project. Having searched the sources up to 1987 for a more recent work by Gumilev, this is most certainly his latest effort. The article, according to an abstract (1980:112) of the translation, appeared on the recent 600th anniversary of the battle of Kulikovo, the mass circulation magazine Ogonek published an article by Gumilev interpreting the 1380 battle between the Grand Duke of Moscow and the Crimean Tatars in light of Gumilev's theory. He interprets the Russian's victory as a result of an innate passionateness generated by a concatenation of events in the 14th century, and the battle itself as the beginning of a Great Russian ethnic community.

Without getting involved in the rather stirring prose of Gumilev's patriotic storytelling, I will try to flesh out the theoretical bones of this work and assess its relevance to both his theoretical advancement and response to the criticism of his project. First, given the article's publication in a widely circulated magazine and my own secondary reading (Wieczynski, 1976; Vernadsky, 1959; McNeil, 1964; de Grousset, 1969) Gumilev appears to correctly set out the historical facts of the battle and its relevance. But the main question is whether Gumilev proves his conclusion (or if it is even provable). Secondly, I raise the question of whether the ethnogenic model is useful, or
even necessary, in his interpretation of these events and conclusions regarding their role in catalyzing the loosely federated Muscovite supporters into a cohesive Greater Russian people. In addition, we may ask whether his exposition of this historical ethnogenesis proves that it follows the appropriate stages and sequences of his model, and if the corresponding psychological attributes are also present.

The battle occurred on the banks of the Nepryadva River. The forces of Moscow and Vladimir under the leadership of Grand Duke Dmitriy Ivanovich Donskoi faced the Crimean Tatars of the Golden Horde under Mamai, and soundly defeated the Tatar army. Gumilev (1980:112) sets out his objectives in a series of questions, beginning by stating that the facts are well known, but

[1] who exactly were the opposing forces . . . [2] why did they fight this battle. . . [3] why did this single battle mark the beginning of such a grandiose process . . . [and, 4] what were the antecedents?

Starting from 1200, Gumilev gives a brief background to the event, and finds the Russian lands prosperous, cultured and at peace. He then digresses to even more sketchily track the pre-ethnogenic roots of the Russian people back to the 4th century, and places the origins of Slavic ethnogenesis back to the 2nd century. But, returning to the period preceding the battle, he finds that by the 13th century the force of inertia of the initial burst of ethnogenesis was waning . . . the dukes [were engaging in] intestine feudal war. Such wars were then being waged everywhere . . . [and] although the significance of these wars varied with countries and peoples, only in the Russia of the 13th century did they lead to a tragic outcome (1980:113).

Here, his earlier description of a pacific Russia in 1200, seems to contradict this last statement of a 13th century tragedy. Nevertheless, at this point he introduces his only major theoretical statement in the article, as follows:

Ethnogenesis differs from societal development in being a discontinuous process and one that is highly localized in each particular case. However, all ethnogeneses resemble one another in passing through identical phases: first the consolidation of the system,
followed by an "energetic overheating," a breakpoint and then an inertial phase, in which the accumulation of material culture and spiritual benefits is accompanied by a loss of courage and initiative and by unwillingness to sacrifice as the standard of behavior for most of the population. This decline is often followed by a new burst of energy, passion, creativeness and even recklessness leading to the death of people, but at the same time also to the triumph of their ideals and to the flowering of states that were created by their exploits (1980:113).

A Discussion of The Major Theoretical Issues Implicit in Gumilev's Model as Presented Here

In the foregoing abbreviation of his earlier model, Gumilev clarifies the concept of ethnogenesis by defining its expansive stage as "energetic overheating." This condition also implies a relatively closed system that cannot exchange energy for entropy with its surroundings fast enough to maintain a balance. As such, one of three possibilities exists: first, the system stores energy as heat until it overflows in a rapid expansion; second, it collapses in an internalization of its heat, "burning itself out," so to speak and shrinking back to its initial state; or third, instead of expanding as a system, it explodes, and the resulting fragments scatter in all directions. In this last instance, the fragments gradually either becoming new ethnogenic nuclei, burn out, or are absorbed by surrounding systems. Gumilev has presented a very neat physical model, one which may be analogous to the more open systems of biology. But, as pointed out earlier by Bennett (1976), in the most open system, the human socio-cultural system, such representations are difficult to operationalize in empirical terms.

Gumilev's second point stresses that "a breakpoint" occurs following the incubation phase, and in the transition from an "expansive phase" to the "inertial phase," where a straight line of energy dissipation occurs. From this description, he appears to propose that along this inertial trajectory, either a gradual loss of energy or an increase of entropy will occur. This
exchange of energy for entropy will occur in an inverse ratio to an accumulation of material and cultural benefits from the preceding expansive phase. Therefore, Gumilev implies that the greater the cultural and social accumulation, the greater the potential for loss of motivating energy, and hence, the lower the collective social potential. Irrespective of whether he actually can prove this potential for an inverse ratio between cultural accumulation and energy loss, or entropy gain, this proposition has subtly modified the larger model. This modification, however, leads to a third point, that is, this decline is followed by a new burst of energy, leading to the death of people, but at the same time also to the triumph of their ideals and to the flowering of states that were created by their exploits (1977:113).

From the preceding proposition and the historical data accompanying it, we can deduce that once an energetic burst has occurred at a particular place, within a specific region, and among a given population, two possibilities emerge. First, that the ethnos is bound to decline, but its social and cultural institutions and their spin-offs can remain, and even thrive. Second, that the process may tend to recur within the region, and among the population inhabiting it, despite a change in their genetic compositions over time. Certain environments will tend undergo sequential occupancy, or ethnogeneses, despite the demise of an original ethnos and its energized originators within the population. According to Gumilev's view, the Russian landscape and its ethnogenic situation is as follows: first, its original Slavic ethnogenesis of the 2nd century is followed by an emergence of the first Russian-Slavonic tribes, the Polyans and Rossohons, in the 4th century; and second, it follows a trajectory of gradual decline before another ethnogenic cycle is generated by a combination of specific conditions and triggered by a particular event.
In the model under discussion, Gumilev presents its two large-scale characteristics: first, in particular regions, waves of ethnogenic activity tend to recur over time; and second, to a certain extent, those waves tend to be synchronous. That is, regarding the synchrony, several waves occur simultaneously in isolated sub-regions. At any given time, there exists a tendency for an intersection between these long-term waves and the potential for ethnogenesis at any given place. Furthermore, each major wave interacts with minor ripples of different magnitudes within the entire anthroposphere. The rare exceptions to this tendency are isolated, local populations, without the natural and human resources, or the socio-technical development, that would enable them to expand in a powerful enough wave so as to break their isolation and emerge on the plane of world history.

Here we have encountered a complex hypothesis that would explain human history in ecological terms, and surpasses any determinist theories, e.g. those of Huntington, Toynbee, or any other grand scheme of historical geography. This is, I believe, Gumilev's ultimate purpose. If his success is judged on testable, and quantitatively measurable evidence alone, the results are not as bright as the logical structure of its qualitative argument and the validity of the generalized empirical data used to support it. But if it stands as a working hypothesis, and over time, each part can be verified, and slowly yield to measurable quantities, then we have truly advanced the scientific study of mankind. Even if such results do not eventually yield positive, quantitative correlations, as a strictly heuristic device, its framework at least provides a better set of descriptive terms and organization for analysing the phenomena of ethnos. In a sense, Gumilev stands as an interpreter of Vernadskiy's "biosphere" as it proceeds towards a "noosphere," a set of phenomena as complex as life itself, and filling in the requisite details of human biological
organization as it changes over time. And yet, is there an implicit teleology which is being missed.

To attribute to Gumilev the Marxist teleology of one great, unified Soviet people, or of an even greater united world proletariat, or socialist people, would tend to contradict his thesis, which, in actuality, challenges this supposed eventuality. In fact, it does so in explicit enough terms to rate the ire of his social determinist colleagues among Soviet historians. Again, is Gumilev striving to extend of Vernadskiy's noosphere in a materialist challenge to Teilhard de Chardin's idealism? Is he then proposing a convergence of the species H. sapiens on a biological and neurological, rather than socio-political plane? Or, to the contrary, does he propose an ongoing reproduction of these energetic, ethnogenic waves: a process that would carry each emergent ethnos to its eventual demise and, as such, would continually fragment social and political institutions through micro-bursts of divisive activity, to the point where no teleological transformation could ever evolve higher levels of human consolidation on a material, biophysical plane, despite any spiral of socio-technic progress. Here we find an ultimate paradox in that the evolutionary imperative continues an encephalization process while the ethnological imperative continually creates friction which expands the ethnic collectivity, but ensures its eventual segmentation and demise. Perhaps the most intriguing aspect of Gumilev's theoretical constructs and propositions is precisely the mystique engendered by a lack of an apparent and explicit teleology or purpose, either in his own writing, or in his suppositions about what this ethnogenic rhythm pulsing through the biosphere has in store for H. sapiens sapiens.
The Empirical Argument Over The Russian Ethnogenesis

Returning to his example of the development of the Russian ethnos, as usual, Gumilev sweeps around the map and through the annals to depict the story in broad brushstrokes. To chronicle the Crimean Tatars as antagonists, and subsequent conditions in Russia, Gumilev refers to the ethnogenic bursts of the 7th century, eventual emergence of the Mongols in the 12th century, and their sweep into Russia, wreaking havoc on the tranquil scene existing in the early 1200's. Much of what he writes has been presented earlier, throughout "Landscape and Ethnos," and in particular in the sections on steppe climates and peoples (cf. chaps. IV-VI); other material can be found in the standard historical references to the Steppe and Russia (cf. Halpern, 1985). We find a twisted tale of fratricide, parricide, and infanticide among Slavs, and likewise between Slavs, Tatars, and Mongols; elite families being rife with jealousy, struggles for power, succession, and hegemony. History has established, for example, that Batu won his fight for hegemony over the Mongol ethnoses through intrigues with the Grand Duke Yaroslav, involving the murder of both his cousin Kuyuk, and of Yaroslav. Batu appointed "his friend and associate Mangu Khan" to command the region of Rus, and together they conspired with Yaroslav's son, Aleksandr Nevski, who had allied himself with both the enemy of his father's murderer and the murderer, and in turn had to fight his own brother who, allied with the Crusader forces, Lithuanians and Swedes, attacked Rus from the West. Aleksandr's pact with the Tatars paid off by helping Rus to hold out against the invaders from the West and "bringing the Catholic aggression to a halt." However, Gumilev's interpretation and lengthy description of Alexandr Nevski's exploits raises some interesting issues, as, in his words,
the heroic genius of Aleksandr Nevskišy had saved the Russian lands only from the conquerors coming from the West. A smug egotism, nurtured in the incubator conditions of an isolated Russia, was pervasive in the 12th and 13th centuries and among the Russian dukes and city elders, among the soldiers and peasants. It was precisely this ethnic stereotype of behavior that had worked against Aleksandr and his closest boyars, that is his comrades in arms. But the very fact of existence of such a conflict demonstrated that, in addition to processes of decay, a new generation, heroic, patriotic and ready to sacrifice, was in the making. In other words, there were people who placed ideals, or long-term forecasts, above personal interests of whimsical caprice. There may have been only a few in the 13th century, but in the 14th their children and their grandchildren were to make up a significant segment of society, priming a new ethnic community ultimately to be known as Great Russian (1980:115).

From the preceding passage we can discern three points critical to Gumilev's theory. First, the correlation of "isolation" to "incubator conditions," necessary for the development of an ethnos when the triggering burst hits it. Second, a particular "ethnic stereotype of behavior," was associated with the incubator conditions that prevailed in the latter days of the proto-Russian ethnos as it declined from its earlier ethnogenesis of the 4th century. Third, the leading edge of energetically endowed people of this embryonic Russian ethnos were rapidly increasing their offspring as a percentage of the total population. But then, neither can we be sure that the impassioned statement Gumilev attributes to Aleksandr, "No man shows a greater love than he who offers his soul for his friends," reflects a biological condition prevailing within this sub-population, or could account for its subsequent explosion as a natural phenomenon in the form of an ethnos. Similarly, it is impossible to answer such a question in terms of historical circumstances and data without a stronger theoretical model derived from contemporary sources and experimental results of testing actual biological processes within the domain of human interaction. But can we measure passion, or intensity, in biophysical or biochemical terms. If one studies the literature on the experimental work in bio-rhythms and brain waves alone, the answer would have to be a tentative -- yes!
Gumilev, however, stands a great distance away from even citing a single study to support the micro-level of his biological contentions. He leaves that for researchers in other areas to fill in the mechanical details of his model, while he colors the surface of our historical canvas with broad, brush strokes. One small note from the preceding passage sets the stage for the following discussion: Nevskiý had "saved the Russian lands only from conquerors coming the West." That is, while the Russian ethnogenesis was building, so also were comparable waves in the West among the Lithuanians, in Asia Minor among the Osmanli Turks, and most importantly, among the descendents of Genghis Khan. As Gumilev describes the Mongols organization:

Within the Golden Horde, some 20,000 Mongols of the house of Juji were divided among three horeds: the Great, or Golden, Horde on the Volga, where the descendents of Batu reigned; the White Horde, on the Irtysh, under Orda, Batu's older brother; and the Blue Horde of Shiban Khan, which migrated from the Aral Sea to Tyumen (1980:116).

Gumilev discusses the intrigues and conflicts within the Mongols between traditionalists and converts to Islam, and the struggle for hegemony by the elite, e.g., the family of Genghis. As he puts it, "the significance of these events which transformed a nomadic empire into an ordinary Moslem sultanate" opened up a temporary alliance between the Golden Horde under their khan Uzbeg, and the Slavs. But, with Uzbeg's conversion to Islam, that opportunistic alliance turned, setting the stage for the ensuing convergence of Slavic and other ethnic fragments and their gathering under the banner of Moscow in the battle of Kulikovo. Thus:

Instead of the previous ethnic symbiosis [among relatively unified nomadic Mongols] ... everything was in rapid flux so that the alliance between the khan of the Golden Horde and the prince of Moscow turned out to be short-lived ... the ethnic symbiosis lasted as long as the members of the Golden Horde were heathens or Nestorian Christians and did not enter into a super ethnus -- Islam -- hostile to Russia (1980:117).
Gumilev next proposes that the transformation in both Tatar social system and tradition, or a biologically adapted, behavioral stereotype of the Tatars who shared the steppe with the Slavs, was the result of their transference from one superethnos, the nomadic Mongol, to another, the Islamic. Despite the fact that the actual individuals involved probably changed very little in their daily behavior, a combination of factors prevailed to create a strong perception of change: first, the slow penetration of a new set of behavioral values and traditions into their way of life; and, second, a perception of a shift towards a Islam as a superethnos in confrontation with all of European ethno-Christianity -- both the Germano-Roman, or Western-Christian, superethnos and its mortal enemy, the Byzantine-Slavic or Eastern Christian superethnos.

The contrasts between Gumilev's discussion of these differences as ethnic, and other historical systems based on labels such as civilizations becomes important in the long-run, but cannot be compared here. Yet one point is clear, Gumilev recognizes the combined role of social factors interacting with the natural elements in the decision making process, and in his (1980:117) view, The change in religion itself was not significant, but it involved a change in political policies, in the direction of culture and in the entire way of life. By his conversion from the khan of steppe-dwelling nomads to Moslem sultan, Uzbeg appeared to side with the merchant capital of trading towns of the Volga valley and Iran at the expense of the interests of peasant Russia and the nomadic steppe.

At this juncture, Gumilev has given us a justification for the changing interests of Slavs and Tatars, but does this explain the biological aspects which he stresses. Or, are we to return to the explanation that it is an internal process involving psychosomatic transformations among individuals within an interactive group which shares common social or ideological concerns motivating them to action? If this is the case, then all circumstantial actions of bravery of bravado, whether by thief, guerilla, terrorist, soldier,
police man or ordinary citizen, are constituted of the same biological psychosomatic transformation. The only difference, then, is whether it was random and spontaneous, or involved a broader social interaction and wider network of individuals motivated in some unknown, but affective, manner, to sacrifice their personal safety or comfort in order to act in a manner altruistic to the group, or ideological cause. Here, I am interpreting Gumilev as putting forth a biological explanation for human motivation, which underlies, but does not substitute for, the conscious legitimating myth by which the individual exchanges value and status within some symbolic context for his actions that ultimately operate on a corporeal, and hence subconscious psychobiological plane. This proposed "passion," or "will to sacrifice," seems dualistic, as if it is based on an intentionality, or a rational, and hence "conscious will." Has it at this point left the realm of biology and entered into some uniquely human and transcendent state of symbolic action? In response, I believe that Gumilev is proposing a form of phenomenological explanation, but unconnected with the epistemology of intentionality from Heidegger through Husserl, Merleau-Ponty and Ricoeur, (cf. Jackson and Smith, 1984; D. Gregory, 1986, viz. phenomenology in the context of geography).

At what level of corporeality and collectivity this hypothesis of Gumilev's can be treated, yet remains to be seen. But one thing is certain, it veers away from the genetic interpretation of altruistic motivation towards immediate kin, as contended by sociobiologists (Dawkins, 1976; Barash, 1977), and in particular, differs from van den Berghe's theory of ethnos as a phenomenon based on kin selection, resource competition, and coercion. I must again state that there appears on the horizon a thin line of interdisciplinary convergence, which would indicate the need for a still closer look at all trends within biosocially oriented research into collective human behavior and the
phenomenology of the individual. This is especially true for scholars like van
den Berghe, whom I respect for having contributed much to my own intellectual
development and pursuit of the elusive ethnos. Future cross-fertilization
between these schools and the work of Gumilev, as well as his Soviet colleagues
yet unknown to us, awaits a mutual “glassnost” in not only the political arena,
but also in the intellectual sphere.

Return again to Gumilev’s story of the emerging Great Russian ethnos
—the one to which he belongs, and within which this work has evolved; he
contends that the conflicts between world systems as behavioral ensembles was
the cause of this epochal conflict between Tatar and Russian. As such, this
conflict ended in victory and ethnogenesis for the Russians; ignominy and
annihilation for the Tatars. This being the case, then within these deeply
rooted biosocial patterns embedded in two distinct and mutationally antagonistic
traditions, lies an enmity that could possibly explain the illogical treat-
ment, from Stalin to the present, of those persecuted and permanently exiled
Crimean Tatars, whose pleas for human rights and a return to their homeland
still ring strong in Russian ears, and whose recent demonstrations (1987) are
reminiscent of the American civil rights movement. Nevertheless, as Gumilev
takes us back through the past, we find that

In the 14th century, opposition to the Golden Horde in Russia crystal-
лизed into a powerful movement associated with a new burst of ethnogen-
esis under the leadership of Sergius of Radonezh [a religious
leader]. It was this movement that drove the Russians to the field
of Kulikovo to do battle, not against heathens, but against carriers
of the Moslem faith representing an alien world and a hostile system.
It was here that the great struggle ultimately ending in victory for

The political split under discussion eventually found the Lithuanians pushing
southward, merging into the Greater Russian population as
they adopted the culture of the conquered Russians, became Orthodox Christians, married the daughters of boyars, learned Russian and waged successful battles against the Tatars and Moscow (1980:117).

As Gumilev relates it, the Lithuanians seemed to be heading towards a domination of Eastern Europe, while on the other hand,

Uzbek and the janibegs, having adopted a new faith and new mores, also benefited in the material sense by winning the allegiance of the Moslem merchants of the rich towns along the Volga River. But they lost out in a spiritual sense because the nomads who had been serving the khans not out of fear but out of conviction, began breaking away from the violators of the steppe tradition (1980:117).

But once the Lithuanians under Jagailo, "that partisan of Catholic Europe," found an ally in the Crimean Tatar leader, Mamai, whose "forces did not disintegrate together with those of the Golden Horde," they posed an undeniable threat to Dmitriy of Moscow, who had allied with Mamai's Tatar opponent Tokta-mish. Thus "Mamai had no choice but to do battle."

What were the conditions in the Moscow domains that both enable them to fight and forced them to do so under the prevailing conditions? According to Gumilev the conditions forced Dmitriy, his spiritual advisors, and boyars to challenge this flanking alliance of Lithuanians and Tatars for two reasons.

First, because

if Moscow's political, ideological independence, its way of life and even its creativeness were to be defended, it meant war against the aggressors from the West and the allied horde of Mamai. It was precisely this alliance that made the situation so acute. Many felt that it would be simpler to submit to Mamai and pay tribute to him... [and grant concessions to the Western powers, i.e. the Genovese who had financed him]. A long and durable peace would then be assured. This platform was supported not only by some boyars, but by the clerics... the supporters of the platform were basically calm, sensible people. They were opposed by the patriots who looked to Sergius of Radonezh as their ideologist (1980:118).

Before taking up the second point of why the supposedly energetic embryonic, ethno-formation of the ideological patriots prevailed, we have to look at the geographical conditions that enabled Moscow to muster the resources supporting
an option of fight. From Gumilev's (1980:119) viewpoint, Moscow occupied a far less favorable position than Tver', Uglich or Nizhniy Novgorod, which were situated on the safe and convenient trade route along the Volga. Neither did Moscow have the kind of fighting experience that had been gained by Smolensk of Ryazan'. Nor did Moscow have the wealth of Novgorod or cultural traditions of Rostov and Suzdal'. But Moscow was the one to seize the initiative in uniting the Russian lands because that was where impassioned, energetic, indomitable people had gathered. They gave birth to children and grandchildren who knew no homeland except Moscow because their mothers and grandmothers had been Russians. And they strove not so much to defend their rights, which they did not have, but to assume duties, for which they were paid by the state. In thus taking advantage of the state's need for their services, the military were able to follow their ideals without worrying about their rights. After all, if the Grand Duke had not paid, the military would have left, and the suzerain would have been left without support.

Who were these first, second, and third generation soldiers, how did they get to Moscow, and how was Moscow able to support them? Gumilev tells us that this unusual system . . . was so attractive that Russia had been gathering in a wide variety of peoples, including Tatars who did not want to adopt Islam . . . Lithuanians who opposed Catholicism, Polovtsians who had been converted to Christianity as well as representatives of Finnic tribes from the upper Volga, the Merya, the Muroma and the Mordva. Moscow had women aplenty, it was easy to get work, food was cheap, and the thieves and robbers had been run out of town by Ivan Kalita. But for this amalgam of people, who lived in peace and harmony, to become a united ethnos required one small detail -- a common historical destiny that would give rise to a collective exploit, a feat requiring superexertion. It is such a set of circumstances that marks the end of purely biological evolution and the beginning of historical development (1980:118-19).

This passage reopens several earlier chapters in Gumilev's work. First, for example, the endogamous factor is clearly shown here to be either missing or relegated to a non-ethnic, non-genetic factor of passing on the common traditions of Moscow's characteristic behavioral stereotype. It remains ambiguous as to what role endogamy had here, or was it only later on, that it was necessary? From Gumilev's statement, however, it would appear that several generations of this hetero-ethnic population had settled into a relatively harmonious existence, implying certain commonalities. A second point here relates to the
need for a super "feat" that would provide a commonality more energetic that
merely living in harmony. If this event did not occur, would Russians be an
"arrested" ethnos? Or if they had fought and lost; would they have become a
"relic ethnos." Gumilev comments on this, as follows:

When the people of Moscow came to realize what was expected of them
-- the defence not simply of their territory, but of the principles
underlying their way of life and their set of values, their view of
the world and their sense of the beautiful, in short, what is now
generally called an original culture type -- all who could took to
arms and went to do battle against those of another faith: Polov-
tsians, Lithuanians, Genoese [whose faith was viewed to be non-
Orthodox] and the apostates, the western Russians who had gone over
to Jogaila's Lithuanians. Only the Novgorodians declined to join
the common Russian cause. They were more concerned with trade
routes, advantageous deals and contracts with the Hanseatic League
... in so doing, Novgorod set itself apart from the Russian land,
and a hundred years later, it was conquered as if it was a hostile
state ... but did retain the culture of the Russian towns ... And Mos-
cow became the focal point of a Russia that had been trans-
formed and had become capable of heroic deeds culminating in sacri-
fice. It was these qualities that enabled Moscow to stand up against

This passage seems to open up more confusion as to the biological nature of
ethnos. There are so many statements referring to ideas and intentions, it is
difficult to see why Gumilev claims that they are inherently biological, and
certainly why his critics have a hard time to see his point.

To make sense of this seeming paradox we have to return to his
previous statement that "such a set of circumstances marks the end of a purely
biological evolution and the beginning of historical development." We might
assume Gumilev means that, prior to this challenge which draws a cohesive and
energized response, the natural processes of social and biological reproduction
were relatively indistinct as cohesive and energized responses, the natural
processes of social and biological reproduction were relatively indistinct as
the previously declined ethnns population simply maintained their existing
traditions, gradually losing their affectiveness until either dispersed,
assimilated or reenergized. In this case, the Russians were reenergized in the direction of Moscow. It is entirely possible that irrespective of their energy, historical circumstances would have allowed the Tatar–Lithuanian alliance to triumph and the Muscovites merely contributing to an increasing Lithuanian ethnogenic growth, the other significance of a loss would have meant slavery or status secondary to other Russian city-states under Tatar suzerainty. Gumilev would convince us, however, that historical conditions of organic solidarity favored the Muscovites, viewing conditions on the other side as follows:

On Mamai's side . . . there was a mechanical mixture of a variety of ethnoses that were alien to one another and were held together solely by the orders of their leader. It therefore took only one lost battle to collapse Mamai's state as if it were a house of cards (1980:119).

As the prior passage implied, the Muscovites were held in the grip of what Gumilev proposed as the primary psychological imperative connecting the individual to the ethnoss through its attribute "be what you are supposed to be," in his model of ethnogenic internal regularity. This condition and its corresponding imperative attribute would also involve an ideal type; in the case of Moscow, it would be a soldier loyal and obedient to his sovereign, who payed his salary, and to the ideals of church, state and family. While possibly simplistic, Gumilev gives little evidence to refute it, and while we do not have to accept as a model or as an explanation for the Muscovites triumph and succeeding ethnic history of Russia, one would have to provide a more convincing alternative explanation. Before turning to other sources that might provide such an alternative, let us see what Gumilev has to say about these conditions:

Those who went out to do battle on Kulikovo field were Muscovites, Vladimirians, Suzdalians, etc., but those who returned were Russians going back to their homes in Moscow, Vladimir, Suzdal' and so forth. It was the beginning of their self-perception as the single entity of Russia (1980:119).

Gumilev, however, brings up further evidence to defend this statement, in that
Having said all this, we can now consider the relationship between the culture of the ancient Russians and that of the Great Russians, which followed. There is a widespread view . . . that the 14th and 15th centuries were a dark period in Russian history causing Russia subsequently to lag behind Europe. In fact this was the time when Andrey Rubley, the icon painter, did his work and when Nil Sorskiy and Vassian Patrikeyev made their fiery speeches. This was when Russian forces stopped the armies of Lithuania and Poland, the vanguard of the eastward advance of Catholicism, when other Russian forces conquered the northern lands beyond the portages [the Northen Dvina basin] or stopped the raids of Timur and Edigei (1980:119).

Having presented socio-historical evidence for an energetic transformation of Russian history, Gumilev leaves us with no basis on which to refute his claims, except for non-biological interpretations of social and historical fate, schemes such as Toynbee's cycles of history, Huntington's pulse of Asia, or Marxist class analysis, etc. But none of these schemes has the overall scope (or problems of proof) as presented by Gumilev's ethnogenic explanation.

Nevertheless, in concluding this analysis, explanation, and exposition of the Russian ethnogenesis, Gumilev (1980:119) finds that even the poet Pushkin:

did not realize the magnitude of the creative surge of the systemic entity that arose on the eve of the battle of Kulikovo . . . Russia first created points of resistance . . . then went over to the counterattack . . . we can now date the crucial moment in the Russian ethnogenesis and . . . perception of themselves as an entity -- Sept. 8, 1380.

This ends the exposition of Gumilev's work accessible to this research. But before turning to the concluding summary and assessment, I will present, for the sake of comparison, several other sources regarding the conditions surrounding the battle of Kulikovo. Wieczynski's (1976) study of Russian frontier history, paints the following picture of the conditions under which the Muscovites were prepared to engage in the event that, unbeknownst to them, would trigger an ethnogenic burst, and bring about a convergence providing "the common historical destiny," or as Victor Turner (1969) would call it, the "root metaphor" of the Greater Russian ethnos:
Few peoples in history have suffered a national disaster as terrifying in its violence, as total in its destruction, and as negative in its effects as the Mongol invasion of Kievan Rus (1237-40) ... the towns of Rus, many of them battered and some all but extinct, lost their former positions as centers of economic life. ... Commerce which had declined during the twelfth century, suffered almost total stagnation ... only in Novgorod which had escaped the Mongol invasion, was vigorous trade still practised ... From the early thirteenth century the German knights who had taken possession of Livonia barred Russians from access to the Baltic Sea while the advance of Lithuania stripped from Rus provinces that had been of great economic importance. ... Even before the Mongol invasion it is probable that individuals, small groups and families from the Kievan south had already resolved to abandon their hazardous surroundings and faltering economy ... this migration wended its way primarily northeastward [Vladimir-Suzdal] ... After the massacres of Batu, this process intensified ... the lands into which these settlers poured were set in forest fastness that easily isolated man from contact with the world beyond ... their religion which immediately set them apart from the pagan Finns, also provided a basis for exclusiveness that preserved self-identity ... As the influx from the south continued, the Finnish element found itself without traditions and a self-consciousness powerful enough to maintain its identity and was assimilated by these new neighbors. From this amalgam came the basic stock of the Great Russian people (1976:35-38).

This highly abbreviated passage describes a picture of the conditions under which the Muscovite-Vladimir principality developed. As to the actual conditions in that principality directly preceding, and during, the period of the battle of Kulikovo pole, Wieczynski continues:

The territory bounded by the towns of Vladimir, Suzdal and Moscow found itself [safe from Mongol raids] and therefore at the center of a constricting [refugee] population that flowed into its jurisdiction from all points on the compass. Those who reached the lands of the northeast were probably not disappointed in the new conditions of their life. Refugees who had sought safety from Mongol raids and civil warfare found the region quite peaceful. Between 1239 and the raid of Tokhtanysh that followed Dimitry Donskoi's victory at Kulikovo Pole in 1380, the town of Moscow and its environs were free from any known Mongol violence. Those who sought economic betterment found their new homeland rich in free land and, at least initially, plentiful in meat and forest products ... Once the timber was felled and burned and its ashes used as natural fertilizer, the soil proved quite suitable for agriculture. The climate, through unpredictable, afforded at least the possibility of regular and bounteous harvests.

Those who came to avoid indenture and personal dependence upon landlords and who dreamed of finding homesteads free from the control of
others were less pleased... Here the princes were all-powerful and in control of the lands and resources of their domains. Most... were self-made men. [who] had created their towns from wilderness that boasted little original population... [but they] were not disposed to impose on the incoming labor force obligations or demands that might cause them to move on to new domains... the density of population secured by these princes... not only secured their own local authority but laid the foundation for the future strength of the princes of Moscow... overwhelmed by their good fortune, those who arrived in this unexpected haven failed to realize that all these benefits carried a price, that the prince held on every man a promissory note that some day would come due... [but] a new type of society was being born, one that derived its strength from the land and from the regulated labor of those who worked it. Upon this new basis the future Russian empire would be founded (1976:35-43).

In general we can see similarities in this interpretation of history and that of Gumilev, differences, however, do appear and grow within the over-all text. While Gumilev portrays a creative surge, the conditions were by no means ideal, as the debt of servitude hung heavy over the peasantry. Deprived of the cultural activities of cities, life throughout the rest of the region "became monotonous and undifferentiated," while crafts and other urban occupations declined with the demise of city life during the 14th and 15th centuries. Even the economic activities associated with trade were reduced to a minimum, and were not of a type to encourage popular participation and afford differentiation in occupation and social status... changes in the nature of the military service also depressed private initiative among the bulk of the population and closed to them another avenue of personal advancement, [due to] the employment of calvery units... composed of a rapidly growing class of military-service landholders... peasants and townsfolk were only used as labor... and were no longer regarded as comrades in arms, but merely as helots... the camaraderie and feeling of joint enterprise that distinguished Kievan military efforts withered away during early Muscovite times. With its disappearance also vanished the leveling influence that exposure to common danger and responsibility for the common good exert upon any formation of men or society (1976:44-46).

Continuing to view the other side of this evolving Russian ethnos, as presented by Wieczynski, we encounter a kind of enforced similarity and domination which bent the majority of the population into an ethnic shape formed by unusual constraints. As Wieczynski states,
deprived of a significant middle class, all of Russian society became narrowly constricted ... social mobility vanished ... the growth of the principality of Moscow was in reality a reaction to frontier forces. The government of Moscow had one basic feeling toward the frontier lands that fringed its principalities: a deep and ingrained fear ... if the Russian lands were to survive, the lands that lay beyond its borders had to be conquered, subdued, divested of their primitive energy, and made to correspond to Russian institutionalized life. To achieve this end, the Muscovite prince had to bend the will of every subject to the task of supporting the large military forces and the sizeable apparatus of state government this undertaking demanded. In pursuing this aim, the ... prince grew into complete despotism, while the sedentary life of the peasant was transformed into a system of complete enserfment. The needs of the state became paramount; the aspirations of its people were subordinated to the designs of ruling powers. In this process the national institutions of the Russian Empire were created (1976:47-48).

Before making any evaluation or comparison between these two differing interpretations of the Russian ethnogenesis, which is really a subject out of my field of expertise, I can only say that this is the very problem in history which Gumilev claims to be responding to with his biological theory. But I do not feel that Gumilev has as deep a grasp of the historical facts as he portrays in these sweeping generalizations of the empirical evidence. As in his use of the scientific terminology and concepts, he has taken liberties with historical facts. While this is no condemnation of his model, which with necessary modifications can be useful, the problems in his historical data require modifications of the model to establish a sound comparative method applied. As Gumilev has suggested, at least two, and possibly three, ethnic systems within two superethnoses should be compared to provide a valid basis of measurement. But even if one were to take only a single case, like the Russian ethnogenesis, it is necessary to at least try to find contradictory data so as to validate the scientific method. Therefore, while its underlying theory may not be totally "grand," this project is grand in scale, and will require an equally grand effort if any part of its research is to be implemented in even one comparable and adjacent set of ecosystems and ethnoses.
A Summary of Gumilev's Methodology of Historical Geography and Theory of Landscape and Ethnos

Covering a span of twenty years, Gumilev's work progressed from a specific historical geography of the ancient Central Asian Huns, through extensive archeological field work on the medieval Khazars of the Caspian coast, and on to a more generalized model for reconstructing past communities through a synthetic method. This method is based on assessing the relationship between landscape and ethnos, and ascribing a natural cause to the rise and demise of ethnoses. To facilitate this model, he devised a chronological framework to correlate climatic fluctuation in moisture distribution over Eurasia and its impact on environments and human populations. He then developed a theory of the relationship between an ethnos, as a component of a landscape ensemble, and its origins, proposing a systemic life-cycle for each ethnos. Furthermore, he has demonstrated the benefits from correlating a wide variety of natural and social data concerning communities and their encompassing landscape. Lastly, Gumilev's model assumes that as a landscape component, ethnos is part of the natural domain. As such, it represents a communications field, or ethnic rhythm which arises from micro-mutations, or consequences of a natural selection process. Evolution thus continues within the human species.
Gumilev's primary intent in this Landscape and Ethnos series has been, in my judgement, to develop a systems model of man-land relations through an integration of a synthetic method and a biosocial theory enabling researchers to reconstruct historical communities in as holistic a manner as possible. This process involves an interpretation of the character of a community as a historically and geographically situated way of life. To accomplish this, Gumilev has sought to draw on the broadest possible sources of data to view the total conditions of that community and establish what relations existed between the characteristics of its population, conditions of its natural environment, and state of its socio-technical development. A resulting synthesis of these factors reveals a particular cultural style, or rhythm of life, by which the population in question adapts to, and modifies, its particular environment according to its available social and technical resources. From his preliminary studies, Gumilev concludes that these three sets of factors (cultural adaptation, socio-technical, and environmental) mutually interact to determine the course of a particular people's evolution within its encompassing landscape. That landscape, in turn, is a schematic map of the interactive, co-adaptive process undertaken by the population attempting to inhabit that particular territory with its unique set of environmental conditions, specific to that place during that period of biospheric and historical time.

To pursue this concept of landscape, Gumilev considers it to encompass a human population with its domesticates (animals and plants), cultural life, and socio-technical repertoire, as a single, but complex and systemic factor -- ethnos. By encompassing ethnos within a landscape, Gumilev has situated it within the realm of natural phenomena, and subjected it to both natural history and investigation by the natural sciences. Is this concept neo-Darwinian, environmental determinism, or an epistemological meta-theory.
To answer this question, Gumilev has to resort to a series of arguments against the dominant social determinism of his academic counterparts, particularly historians and ethnographers, steering a course within the philosophical straits of historical and dialectical materialism. In this extended polemic, he also had to justify his natural science approach to developing a method and constructing a general theory of ethnos. To do so, he first had to situate his approach within a dual epistemology, that of natural science and that of ethnography, while satisfying the concerns of history; he found a logical place for his "ethnology" within the discipline of geography, specifically historical geography. Moreover, all this had to be carefully couched within the dominant discourse of Marxism. Soviet geography as a discipline, has no recognized substream of cultural geography, and so within its traditional disciplinary matrix only the physical stream, as natural science, offered a sanctuary for his research. Even this niche was endangered by an attempt to erode the divisions in Soviet geography and create a unified praxis based, however, on a quantitative, sociographic theory and method. Gumilev faced a monumental challenge in this labyrinth, especially as his range of polemics and empirical-theoretical discussion increased over two decades of research and writing.

The question of reconstruction and a synthetic method evolved from Gumilev's empirical work in trying to ascertain the exact material conditions, and even location, of a historical community -- the Khazars. A second purpose in this field work was to discover the relation between fluctuations in inland water levels, particularly of the Caspian Sea, and climate change. Facing inconsistent historical records, Gumilev found that archeological and paleogeographic methods could provide data to show how an increase in the Caspian Sea level covered possible sites for the main urban centres of the medieval Khazar empire. And, as the mean level of inland waters were found to fluctuate over
time, and to the degree that these fluctuations could be measured, Gumilev had found the primary variable in dating archeological sites in relationship to their physical features. Conversely, the location of these historically documented sites and the dating of recovered artifacts, along with biotic evidence, helped to date the water level and shoreline at precise periods in history. From this evidence, it was possible to propose a chronology of climate throughout the region. To these data were added research findings that a pattern of north-south shifts in the cyclonic belt straddling Central Asia affected the long-term distribution of moisture.

The major long-term atmospheric, and hence ecological, zones of Eurasia are divided into humid margins (Atlantic Europe and the Asian Pacific), and a vast arid centre. As the path of cyclonic activity moved northward, the moisture carried eastward from the Atlantic by the jetstream was deposited in the western, humid zone increasing moisture in that region. Consequently, the increased moisture deposited in the Volga river catchment, added to the runoff into the Caspian Sea, raising its level. Correspondingly, less moisture would reach further east into the increasingly arid Central Asian zone. With a southward shift of the cyclone tracks, however, the jetstream would bring moisture further east and inland, north of the high pressure ridge, depositing more moisture across the steppes and into the arid regions. The resulting balance of rainfall across a wider belt decreased precipitation in the humid zones which then experienced generally warmer, dryer weather, and likewise decreased the Volga runoff, thus lowering the Caspian Sea level.

Constructing a long-term chronology of these fluctuations, Gumilev was able to propose that several crucial points in history were directly correlated to certain climatic conditions. Of primary importance were two periods of "climatic optimum" in the steppe, (1) the 20th to 13th centuries B.C., which
saw the spread of high Neolithic and Bronze-Age culture with corresponding plant and animal domestication involving mixed livestock herding and grain cultivation, and (2) the 12th century A.D. moist cycle that allowed a repopulation of the previously arid steppe, and the ecological basis for its economic development and subsequent formation and rapid spread of the Mongol empire across a vast terrain. This latter period probably represented the peak of steppe civilization and economy, as a subsequent downturn involved progressive desiccation and social fragmentation which continued to this day. However, while also involving a temperate and beneficent environment, this former period also brought the rapid collapse of a widespread culture with an ensuing drought. This environmental shift influenced three possible human responses: (1) retreat into the northern, forest-hunting economy, (2) into agrarian peasant life in the humid zones, or (3) a new form of socio-ecological adaptation to environmental conditions encountered in the increasingly arid encompassing landscape -- pastoral nomadism. Gumilev has constructed a large-scale model for interpreting the historical geography of the Eurasian steppe and the variants of its pastoral-nomadic form of economic life which, at the macro level, have a definite, and identifiable, genesis, peak, and demise.

It was the second (12th century) "optimal" period in the chronology of steppe climates that enabled a development of the region's energetic potential. The Mongol ethnogenesis carried that energetic drive to the far reaches of the Eurasian landmass. But several other important aspects of the climatic evidence appear in this chronology: a long-term desiccation trend in the steppe, an explanation for the biblical "deluge," and three "xerothermic" periods. These latter periods occurred in both the 3rd and 16th centuries as trans-Eurasian arid spells, and in the 12th as an equally widespread humid effect, resulting in the just mentioned optimal period. On the other hand, Gumilev
avoids any determinism in trying to identify any causal pattern to these seemingly random shifts in the cyclonic paths or attributing all of the social events in the region's history to climatic or environmental causation.

The factors of climate, environment, social and cultural activity all merge into a synthetic whole in which an attempt to reconstruct the conditions and character of any community calls for a comparable method and theory through which the researcher can interpret more specific tendencies and sub-systems and model the particular situation. Gumilev's meta-empirical propositions move from one level of analysis (the specific) to a second level (the general) so as to re-evaluate the specific from within a higher power of theory, and can result in further modification of the theory as was his stated purpose. To test this hypothetico-empirical model, Gumilev has drawn on a wide range of evidence from varying sources and correlated them to specific historical-geographic situations and sets of accompanying conditions. Based on this method, Gumilev has accomplished the following: defined the range of Khazaria as a specific historical place and ecological adaptation; ascertained the environmental and climatic patterns during the course of its existence; discovered the exact location of, and dated, its main urban centres; found the causes of its demise, and traced the subsequent redistribution of its population; and enabled historical documents to be reinterpreted and verified based on substantial material evidence. Secondly, he has confirmed the origins of steppe nomadism in both an original manner, and in contravention of the dominant ideological constraint which framed it within a socially-determined stage of history, inconsistent with material evidence. Moreover, this reconstruction is consistent with material evidence from both Soviet and other historical-geographic archeology, and paleo-ethnogeographic research.
Along with a partial reconstruction of the steppe's historical geography, Gumilev has proposed that this transformation of life in the Eurasian steppe induced a qualitative change in the pattern of human organization, the fragmentation of a loosely homogenous culture into recognizably distinct socio-cultural groups, or the genesis of steppe ethnos. But in this regard Gumilev pleads a special case for the steppe environment offering a greater "readability" of such processes because of its varied, yet readily interpretable, natural ecology. The third aspect he identified was a major historical and geographical frontier region, within which a boundary runs between eastern and western steppe ecosystems, including ethnoses, and represents a primary physical, biotic, and climatic division, e.g., running down the middle of the Dzungarian basin, this frontier is known to biogeographers as the boundary between Dzungarian (eastern), and Iuranian (western), geobotanical regions. It also divides cyclonic weather systems and, based on historical and archeological data, a comparable division can be constructed for cultural systems and ethnic populations. This division provides the basis for Gumilev to postulate a distinction between "two ethno-psychological syndromes" that, in turn, engender two distinct lines of ethnogenesis.

Within this extended project, Gumilev applied the same model of wide-ranging data collection and mode of analysis to the Huns, interpreting and reconstructing a model of Hunnic civilization, and recognizing them as the first fully nomadic ethnic system, and a socio-political formation unique to the Eurasian steppe. He dealt with the origins of the ancient Turks and briefly encompassed the entire historical geography of Central Asia (Gumilev, 1967). Without any extensive treatment of the Mongols, he summarily covers their rise and demise in so far as it marks a critical turning point in the evolution of landscapes and ethnoses of the steppe, leading in the West, for
example, to the Golden Horde. The final blow to steppe hegemony was struck by the rising power of Moscow-Russia in the battle of Kulikovo in 1380, where the Golden Horde was severely defeated in a psychological, as well as physical, demarcation of steppe power. Hegemony over the "heartland" then shifted for the first time to a European state.

Concluding with a brief reference to the final demise of pastoral-nomadic hegemony in the East, Gumilev represents the plight of the Ouriat-Dzungariana Mongol confederation as a dying gasp. Under attack by the Manchu-ruled Chinese state, this last steppe-based, state formation struggled futilely to control its own destiny in the face of overwhelming social and environmental factors. Social and technical forces now prevailing in the arena of warfare and economic organization overwhelmed any potential steppe resurgence. While Gumilev's project touches on many other world regions and ethnoses, nowhere does he command the same authority as in presenting his theory in the specific context of a historical geography of the Eurasian steppe.

While a thread of concern for the fate of Central Asia along with a description of its historical geography are developed throughout the fabric of Gumilev's work, the bulk of his argument revolves around theory and methodology. The problem here seems to revolve around having to limit his work to modes of historical geography active inside of the Russian and Soviet traditions. When compared to the classic works of modern cultural geography, that of Gumilev fits well with those of: Xavier de Planhol, Harlan Barrows, Carl Sauer, and others who follow an ecological-historical approach. But even when constrained by the philosophical requirements of his situation, Gumilev was able to create a working hypothesis and method acceptable to both the principles of dialectical and historical materialism and to any external criteria of scholarship, no small feat in itself.
Having now surmounted the problems of sufficient evidence to support its claim as a theory (at least until disproved), Gumilev's theory of landscape and ethnogenesis, and the standards used to develop it, are based to a great degree on the best traditions of 19th century natural science. In this task, he works arduously to ferret out new sources of data to amplify the accumulated scientific and scholarly knowledge about the particular historical communities under study. Some data come from the theoretical niches of other disciplines, yet much of them are generalized from empirical history and geography. At times he takes risks in proposing new, and somewhat speculative hypotheses based on rather broad generalizations from the data. But these "empirical generalizations" are defended, in that it would be virtually impossible to digest the sum of original sources necessary to encompass any particular problem in as long term, and spatially diffuse, a span as posed by activities affecting the historical geography of the whole Eurasian steppe. When reaching beyond this region, however, those empirical generalizations remain at times undigested, and do not provide proof for the broad theoretical generalizations advanced.

Addressing those theoretical generalizations, we begin with the most controversial concept of innate drive, as the activating principle in ethnogenesis. Aside from this point his general developmental argument is sound, but here not all the pieces are in place, nor fit well, as the following two points illustrate. First, it is reasonable to assume that two or more populations and landscapes are necessary to generate the emergence of a new ethnos. Likewise it seems a reasonable assumption that the surplus energy necessary to generate that inertial burst is derived from natural conditions. But what becomes problematic is the measurable cause, transmission, and location of this energy, which Gumilev accounts for by a "refraction" into the motivity and behavior of individuals through the central nervous system.
The other factors in his model, especially that of natural selection, are readily accounted for in terms of human behavioral stereotypes and preferences among populations in mating practices, or in the case of communications fields, a resonance that triggers recognition of mutually relevant codes and emotional commonalities (cf. interaction rhythms and entrainment, p. 560). Similarly, it is reasonable to assume that an ethnos exists as a population segment of the species comparable to natural formations in other species, e.g., flocks of birds, herds of bison, packs of dogs, or the social groupings of other primates. Nor does this seem unreasonable when Gumilev allows that its shared rhythms and behavioral stereotypes are inherited through a form of social interaction rather than genetic transmission. What he proposes is an analogy to signal heredity in zoology. The co-adaptation between an ethnic group and its encompassing landscape is as easily supported as Lumsden and Wilson's (1979) theory of gene-culture co-evolution, which itself has become an acceptable hypothesis. Again, the life-cycle model of an ethnos, its rise and decline, accords with empirical findings; in the larger, long-term ethnic formation of Eurasian pastoral nomadism, a form of "superethnos" that seems to have run its course in several millennia, and in the spasmodic rise and fall of smaller levels of ethnos within its span.

The remnants of steppe nomads now live either in a somewhat relic state of subsidized homeostasis with their environments, or have fragmented off into new ethnic re-groupings inhabiting new landscapes within old environments. An example might be the Mongols, who continue to occupy steppe niches as pastoral nomads, but within a socially regulated economic system. Nomads have integrated into the greater modern Mongolian ethnos, which is as much an industrial and natural resource extracting and processing, or urban clerical way of life, as one devoted to hunting and herding. This raises another issue with
Gumilev's theory, how well does it apply to the modern conditions and how much is it a tool, albeit a valuable one, for historical geographic research.

The tradition within which Gumilev works, especially that of Vernadskiy's materialist, philosophical science, admits to no historical limits in the sense that the biosphere evolves, as do its multitudinous populations of varied species. To understand the process of natural selection and evolution in our own species, the theory of ethnogenesis would have to have continuing explanatory value for contemporary human behavior and identity in order for it to have an affective role in interpreting long-term behavioral processes. Gumilev's response to this problem is to claim the impact of distance. That is, pre-paleolithic hominid behavior and collective organization into subspecies units lie outside the boundaries of this method which depends on a synthesis of data not available for such an early time. Then too, Gumilev claims that the problem of closeness removes a distancing and assumed objectivity from the researcher. I would, however, argue against this latter proposition, in that any natural science of human behavior, i.e., ethology or psychology, would be no less subjective than sociology or other forms of so-called objective social science, including human geography.

Several problems confront us here. First, should one attempt to continue developing this model and its ensemble of theory and method only in historical settings where it can and does work to reconstruct a fuller representation of the characteristics of natural communities and their encompassing landscapes. This option implies abandoning an attempt to convert it into an operational theory with which to examine and explain contemporary human behavior. That option would leave this approach where it seems to work well, continue to develop a more accurate way of measuring and solving its inconsistencies, and build a better method for interpreting historical geographies. On
the other hand, using the model to deconstruct and analyse contemporary communities may shed new light on its value for reconstructive work. If, however, it does not work well in analysing contemporary ethnological problems, then it may still be operational as a historical method. Or if too many other weaknesses emerge in the course of comparing this model to current empirical situations, then it, like many other ideas or intellectual projects which have outlived their usefulness, deserves to be buried. Having summarized the work discussed throughout this thesis and commented upon crucial points, I will now turn to a few concluding remarks that should provide a final assessment of Gumilev's work and indicate a continuing direction for its further research.

Some Conclusions on Gumilev's Theory and Method

In pursuing a method, aside from the Marxist frame of reference, Gumilev's call for synthesis converges toward most current directions in cultural and geographical research. Likewise, his holistic reaction to the empiricist method of isolation, for example, continues to prove the limitations of laboratory as opposed to "field" experiments, particularly given the increasing analytic power of ethological methods. And yet, here too we find a further need for synthesis, and theoretical framework to compare and contrast the results from laboratory and field.

As Gumilev has followed a materialist historiography of social and natural evidence, so he parallels an established approach, the Annales school, with its corresponding use of ecological data in constructing social histories of regions. While Braudel and his colleagues attempt to find rhythms of long duration within broad areas, the internal structure of these "economic" systems could use a more powerful theory to explain the rise and fall of ethnic subsystems. Here Gumilev's theory can make a distinct contribution to the
discourse of history. As is well known in historiography (Ferro, 1981), the
discourses of history cleave to national styles incorporating methods, theo-
ries, and positions. Therefore, while I support Gumilev's synthesis and situ-
ate it beyond the Soviet discourse, his geographical approach, in line with
material history, finds resonance in other systems, notably the Annales, where
the discourses of history and geography are less formally distinct avenues of
inquiry and, in fact, form a distinct whole. Also, in accounting for the rise
and fall of ethnic populations as natural conditions modified by social circum-
stances, his theory fills a vacancy in systematic histories.

A theory of ethnos (that accounts for the rise of an ethno-landscape
ensemble inclusive of its domesticates and culture through energetic phenomena)
assumes that environmental transformations, mobility and expansion follow the
genesis of an ethnos. But an environmental transformation is also needed to
give rise to the ethnogenic process. In Gumilev's terms, ethnogenesis requires
two or more distinct and adjacent, ecosystems and human populations. These
human ecosystems must be in an interactive relationship to an environmental
pulse that jolts the landscape, and to which certain individuals respond. This
aspect of his theory was the most difficult to answer and most broadly critici-
zed, raising the following questions: what are these energetic jolts, how are
they transferred to the human organism, and why are some and not all individu-
als effected? To answer these questions, Gumilev first attributes this energe-
tic jolt to fluctuations in the energetic processes of the biosphere. By
"fluctuation" he means the ever-present, but discontinuous, events occurring in
ecosystems as matter and energy undergo qualitative and quantitative transfor-
mations and distribution throughout the biosphere, including atmospheric in-
fluences affecting climate. Each species reacts differently to such influences
and impacts on its lifestyle, and not every individual would adapt in the same
way as mutations arise along with natural selection in relation to external influences. For the human population, these mutations affect the central nervous system (CNS) and systemic rhythm of the individual organism. As Gumi-lev states, the change in an environment, or landscape, affects the individual as energy changes are refracted through the senses and CNS affecting its behavioral stereotype, or systemic rhythm of the individual organism as it interacts with its environment. To better understand this process, we will take a look at rhythm.

Rhythm, the primary basis, according to Gumilev, by which individuals recognize each other as members of a common ethnos, or as different, is a property of every organism. Moreover, as ecosystem, each landscape constitutes a particular rhythmic pattern, its various oscillations and resonancies give rise to rhythmic properties that represent the sum total of all interactions occurring within it, plus an emergent property, the whole being greater than the sum of all its parts. We are in a constant state of vibration as rhythms regulate our behavior and our body's instinctual motivity by constant monitoring and response to external, internal, and interactional pulses. How this rhythm is established is clear, and it is now generally assumed, as Hall (1984:190) states, that

it resides is in the CNS and endocrine system -- but principally a habitual character of responding to familiar and similar patterns. [Hall continues,] . . . as more is learned about the human rhythm spectrum and how our own rhythms relate to the earth's energy fields, the explanation of synchrony at a distance will become clear.

Based on this brief excursion into the now established character and importance of corporeal rhythms, their role in ethnogenesis should become clear, as we consider the symbiosis of internal and interactional regulatory processes.

The impact of discontinuous environmental changes requires adaptation on the part of organisms and populations, and necessarily involves mutations,
and, as Sheldrake (1981: 141) states, in those rare cases where mutations lead to changes which are favoured by natural selection, not only the proportion of mutant genes in the population tend to increase, in accord with neo-Darwinian theory, but also the repetition of the new pathways of morphogenesis in increasing numbers of organisms will reinforce the new chreodes; not only the 'gene pools', but also the morphogenetic fields of a species will change and evolve as a result of natural selection.

Though Gumilev accounts for this process by non-genetic paths, as does Hall, I would not rule out the genetic level of transmission, given the growth of our knowledge about the role genes play in the organismic system, and their startling ability to rapidly and frequently undergo transformation. We cannot rule out a genetic path for predisposition to entrainment, i.e., the pattern of synchronic recognition and repetition, and for elements of the actual behavioral rhythm. Researchers into rhythm (Sheldrake, 1981; Hall, 1984; and Condon, 1984) all refer to the difference between structural and regulatory genes, in their response to external stimuli and capacity for mutation. Through these analogous theories which follow from empirical and experimental results, and which support Gumilev's hypothesis, we can begin to view that his propositions as moving from a status of working hypothesis to that of theory.

One aspect of rhythm at the organismal level involves the mechanical processes of energy transmission within the organism. We know, for example, that while energy derived from the environment, as Sharkey (1975) states, involves the body's chemical conversion of food, water and air as carbohydrate, fat and protein molecules... the oxidation of these molecules provides the energy needed to drive the human machine... the energy for contraction comes from the splitting of high-energy (ATP) molecules... taking place within the cell... [and involving] high-energy bonds that require numerous enzymatically controlled steps to produce, quickly release the stored energy to power the contractile process. The supply of ATP in the muscle cell is not great. Thus, if we are to continue muscular contractions for any length of time, the pathways leading to the production of ATP must be activated (1975:25).
While both anaerobic and aerobic pathways carry energy to the muscle cells, neuron and enzymatic factors regulate these flows. Here we move from the structured to the "fine tuning" of the system through rhythmic, regulatory mechanisms. Also relying on fuel energy, the regulators are able to synchronize the bodily functions and vary in their tempo of energy release and distribution throughout the body.

Regulatory rhythms, controlled by the CNS and endocrine system, also respond to external stimuli, and it is at this systemic level where both interactional and ethnic rhythms evolve, as well as where mutations in that process occur. Therefore, assuming Gumilev's analogy between ethnogenesis and phylogensis, mutations in the species would occur within a particular population. This occurrence would allow us to substitute the level of ethnos for that of the species, to treat ethnos as the level at which mutations occur, and affect, according to Sheldrake, a new morphogenetic field. In this case, the field would be rhythmic rather than structural, and synonymous with what Gumilev terms a behavioral stereotype. Following Sheldrake's reference to the neoDarwinian law of natural selection, the mutated, e.g., energized, population that carries the new behavioral stereotype, and hence ethnorhythm, will increase as a proportion of the population at large. This expansion would reinforce the character of that ethnorhythm and its transmission through its corresponding interactional patterns. We could, however, also infer a genetic predisposition towards such rhythms in chreodes and canalization (cf. Sheldrake, 1981; Chapple, 1984).

Describing ethnorhythms, Gumilev referred to genetics and physiology for further explanation. In discussing the entrainment and synchronization processes in interaction rhythms respond to that referral, Chapple (1984:32) answers Gumilev's challenge by defining interactional rhythms as
the resultants of the interplay of the somatic, automatic, and endocrine subsystems of the central nervous system (CNS), as we now understand it... They are primarily identified by observations of somatic muscle movements. They constitute the neurobiological configuration of the individual through which the learned cultural patterning of the interaction rhythms are expressed... It should not be thought that since these neurobiological components are derived from the genotype, they are not modified experientially, from the moment of birth, and even before... [as] it is the regulatory genes which control the rates at which neurobiological change takes place and through which environmental modification of patterns of behavior occur... [and] although experiential influence can potentiate, modify, or suppress genetic expression, the genotype also sets boundaries beyond which changes will not appear. This is why interaction rhythms are species-specific, and thus a universal property of humans, yet also capable of absorbing and elaborating on the cultural differentiations which experiential influences cumulatively provide.

From Chapple's (1984:34) discussion of how mutation affects the CNS in a manner relevant to Gumilev's theory of ethnogenesis, we can, for example, view oscillation frequencies (rhythms) as a reaction to external stress (environmental jolts) on the part of some individuals within a population which deviates from an existing (homeostatic) norm.

Assuming Gumilev's propositions of ethnogenesis and ethnorhythm sufficiently proven, we can continue to assess the rest of his model. From the manner in which energy and rhythm affect the structure of ethnos as a systemic process, we can look briefly at two examples, the Sinitic and Muslim systems. But first, I will discuss the hierarchical categories Gumilev terms convixia, convivia, subethnos, ethnos, and superethnos, which represent heuristic boundaries for actual population units. In turn, these units both occupy territory and landscapes, constitute elements within a system, and act as ves-sels for the valence between individuals at different levels of overlapping rhythms in their behavioral repertoires. These energy flows conduct information while receiving feedback in the form of synchronicity or asynchronous impulses (Chapple, 1984: 41). Like other pulses, oscillations and waves in the bio-energetic field of a landscape and its human population, ethnogenic energy and ethno
rhythms display a great amount of random sequencing at different times and levels. Expanded to a macro-plane, however, the spatial distribution of energy concentration is likewise discontinuous and generally found where conditions of diverse ecological organization overlap. By using historical records Gumilev is able to reconstruct a geographical distribution of areas where ethnogenesis has been most frequent. He also proposes a "long wave" cycle whereby, larger ethnic aggregates, i.e., ethnoses and superethnoses, exhibit a regularity, and precluding sudden interruptions, span an average of 1200-1500 years. Therefore, all other factors being equal, the long wave oscillation of ethno-phenomena tends towards a hierarchy of correspondence between size and duration (e.g., the larger the unit the longer its span). The pattern of inertial energy for ethnosystem units at all levels, when plotted over time, and against thrust, displays a tendency to form a similar curve (cf. fig. 9).

External factors can disrupt the natural rhythm and trajectory of an ethnos and its inertial energetic path, as can internal disruptions. The disrupting factors may be; (1) attacks by superior predators (war), (2) parasites (disease), or (3) environmental changes beyond the adaptive capacity of an ethnos' behavioral stereotype without further mutational processes, which could give rise to new, or successive, ethnogeneses. Internal disruptions, however, can result from either (1) an overheating (e.g., extreme conflict between the energized members of a population), or (2) exogamy, resulting in too many new breeding partners bringing more than one new behavioral stereotype into the population at a time, so that the transmission of a single unifying rhythm becomes impossible (e.g., too large a noise-to-signal ratio). But what data supports these theories, are they sufficient and do they actually describe empirically observable occurrences; or events that directly correlate to the theory. My following conclusion should answer those questions.
First, in presenting his data, Gumilev provides extensive and verifiable material for Inner Asia, although, as he states, no evidence can be found for the initial ethnogenetic point. This problem, of a lack of data to reflect an initial surge of energy, as he explains the proto-ethnos, must "incubate" before transforming into activity sufficiently strenuous to merit recording (cf. p. 293) or leaving physical evidence in archaeological or paleo-geographical materials. Nevertheless, his discussion of every ethnos has been couched in rather broad terms, empirical generalizations. Even given my limited competence in Russian, I do not find Gumilev's major works on the Huns, Turks or Khazars to be sufficiently exhaustive in detail and material evidence, either from historical or geographical sources, to fully expound his theory in a single case study. The model, of course, appears strongly in those works but the major problem would seem to be an attempt to cover too large a historical period, geographical area, and population in too short a work. This problem may, however, be attributable to the politics of publishing, as editorial decisions may preclude a more extensive work. Furthermore, Gumilev states that ethnos as an indicator of a landscape's historical geography, should work to measure "any place on earth at any historical period and at any level of civilization" (cf. p. 189), this contradicts his reluctance to use it in the modern period because of what he describes as "the distortion of proximity." Therefore none of Gumilev's empirical data can be used to test the universality of his model because he has not seen fit to challenge the problem of proximity. A combination of political and other factors, however, may explain this weakness, although its solution would also generate a tremendous increase in both the literature and number of conflicting interpretations. Nevertheless, Gumilev identifies the battle of Kulikovo Pole as the ethnogenic moment for the Greater Russian peoples. Such a statement contradicts his earlier rejection of
the ability of his theory to do so, because of the incubation period, and is excusable only if this ethnogenic moment differs from the initial burst of energy, and represents a manifestation of that energy following its incubation. Therefore, the exact moment of the Russian ethnogenic "jolt" must still remain hidden, and presumably the same is true for most ethnogenic events.

To fully assess Gurnilev's theory and model of ethnos requires applying his synthetic method to a particular superethnos, comparing at least two ethnoses within it, and following it down to the lowest level of subethnos perceivable. It also calls for that superethnos to have been around for a sufficient time, and be well enough documented so that the researcher can fill in the systematic linkages and identify the elements. Moreover, to test the strength of ethnoses as an indicator, the superethnos should stretch into the present time. Gurnilev has called for such a comparison, and, in fact, suggests two or more systems be compared. I believe that such an effort is possible, and suggest that the Muslim and Sinitic superethnoses could well be the best systems for me to test, based on my background in each.

One anomaly arises immediately in the comparison of these two super-ethnic systems: the length of the Sinitic system seems to far surpass the natural span for such a system. This length can be accounted for by several major dynastic changes involving ethnic shifts, especially between north and south, with the Tang expansion south of the watershed between an old superethnos centered in the north, and a new superethnic transformation in the south, occurring in the 9th to 12th centuries. As to the Muslim world system, its origins are pinpointed so exactly that its unique ethnogenic process should be more apparent than in most other systems. Moreover, its 14 centuries and three stages of ethnic development -- Arab, Persian, Turkish -- continues on into modernity. In fact, the growth of Islam out of previous civilizations and
superethnoses within the larger region of its expansion, correlates in some way
to a transition in the Sinitic realm during the same period, (i.e., the rise of
the 19th century). Or, for example, the fact that a certain temporal correspondence
exists between the simultaneous rise of the Qing and Ottoman dynasties in the
17th centuries, and their fall at the end of the First World War. Space-time
consistencies may also be synchronous, as implied by Gumilev's research.

Regarding the hierarchical aspect of each system, China has long been
misinterpreted as a unified whole. In fact, its hierarchical structure falls
into ethnic and sub-ethnic levels within the so-called Han peoples who constitute over 90% of the population. Even Eberhard's (1982) study of Chinese
minorities neglects this difference. But, a perceptive study by Mosley (1985)
rectifies this situation, providing a new direction to Sinitic studies and a
useful approach that corresponds to aspects of Gumilev's theory. Although
Moser's work follows a strictly empirical and functionalist approach, he shows
that neither Chinese history nor contemporary social history can be understood
without recourse to an ethnographic analysis of both the players and field of
action. But, such an analysis must have a systematic and theoretical foundation, such as Gumilev's, to put it into perspective. For example, the "Long
March" of the Chinese revolution involved the crucial support from the Hakka
ethnos, particularly influencing the location of the Jiangxi Soviet. Moser
(1985) demonstrates the importance of ethnographic data in the fact that Mao's
partner, Zhu Teh was of Hakka origins, which

helped him relate to the south Jiangxi Hakka . . . when the Zhu-Mao
forces . . . began their long march by keeping to mountain lands of
marginal agriculture inhabited largely by Hakka. It is conjectured
that the Red Army was drawn primarily from the Hakka community at
that time (1985:47).

The main thrust of Moser's argument, however, is a historical ethnography of
the mosaical formation of Sinitic peoples and their multiple layers of smaller
local groups. His presentation of a diversity ethnography among the Han majority, fits a hierarchical model and especially Gumilev's theory of a super-ethnos which could effectively explain the reality described by Mosley, who relies mainly on a linguistic frame of reference. Together with the ethno-linguistic data which Moser has organized into a limited historical geography of the Sinitic peoples, Gumilev's theoretical construct could provide a framework for reinterpreting Chinese history. Gumilev's theory admirably suits this task while on the surface it seems to immediately validate the theory, and as Moser states,

at many turning points in Chinese history, underlying subethnic factors, perceptions of group interests at the regional level, and local value systems, have been crucial elements in events that shaped the future of the nation (1985:8).

Having reached the limits of descriptive empiricism, only a higher order theory as provided by Gumilev can extricate the meaningful data in order to build a holistic, systematic model that responds to ecological reality. Only such a theory can cut through the mystique of social and ideological histories, or fragmentation of local ethnographies, and weld them into a powerful model of the whole, viewed through its parts and their linkages. Such a project would truly inform and enrich the abstraction (e.g., Skinner's (1965) model of China's market network), while giving texture and operational theory to works such as Iuan's (1969) brief, erudite, but descriptive historical geography of China.

Compared to China, the Muslim world proves less bound in a historiography of centrality and unity, although its more obvious diversity increases the problem of proving it a coherent system. In fact, many historians and social scientists with a claim on Islam or Muslim geographical units, say the Middle East, itself a contested term (cf. Eickelman, 1981:1-5), deny the validity of a Muslim world. Some scholars have also questioned the meaningfulness
of Islam as a term to explain the great variety of practices under the extremely different social environments in which Muslims are found (cf. Eickelman, 1981: 201-05). The connection between a unity and diversity of Islam, however, has proved a paradox to such widely ranging scholars as von Gruenbaum (1955) and Said (1979), the latter a critic of orientalism as practiced by the former. Although, as Said (1978) pointed out, the timeless essence of Islam is a fiction, its dynamic evolution has most certainly coevolved with the societies and ethnoses that constitute its variety of praxis, and, in turn, are encompassed by its mystique. I consider a number of recent works as taking new and fruitful approaches to studying the Muslim world, Gilsenan (1982), for one, merges an ethnography with sociology to recognize the importance of the local to the larger realm. Fischer (1980) unravels the knot of Iranian Shi'ite educational institutions and their role in diffusing a cultural paradigm, or in terms of ethnos, a behavioral stereotype. Similarly, Gellner's (1981) concept of hierarchy corresponds with an ethnic taxa through rethinking segmentary lineage and its application to Muslim societies. Then too, Geertz (1983) draws some significant conclusions about the ethnic relationship which the Arab naming system establishes between local and system-wide identity, as diffused throughout the Muslim world. But even though masterful and somewhat comprehensive histories of Islam have been written (Hodgson, 1974), with the exception of Coon's (1961) controversial and outdated Caravan, we must again turn to the Annales school for a historical geographic approach inclusive of ecological and sociological perspectives. A recent addition to the literature (Week's, 1984) takes an ethnographic perspective, and presents data corresponding to Moser's China material. Weeks' comprehensive, and alphabetically organized ethnographic survey could be used as a base restructured into both an ethnographic and historical geographic framework. Combining Gumilev's theoretical foundations
with Weeks' collection of data would prove a useful starting point in to
develop a historical ethnogeography of the Muslim world system.

My first guide in considering a historical geography of the Muslim
world was de Planhol's (1957) sketch for such a project. Though straight
empirical description and interpretation, de Planhol's work provided a geogra-
phical model which could be filled in by a reorganization of Weeks' ethnograph-
ic data within Gumilev's theoretical framework. Also close to the work at
hand, was Lombard's (1971) economic geography of the core Muslim world. Writ-
ten in the Annales style, his discussion of linkages is crucial to establishing
a relationship between ethnic elements within the system.

To conclude this discussion of the Muslim world and relate it to
China and the present assessment of Gumilev's theory, I maintain that the
Muslim world exists as a system and can best be explained by reference to its
ethnogenesis and functioning as a superethnos. Its encompassing landscapes
include a great variety of ecological types from steepe to tropical rainforest,
but the urban/port/waystation settlement patterns and nexus between nomads of
both the maritime and sandy inland seas provides a model encoded in a behavio-nal stereotype that predominates throughout the system, irrespective of local
ethnic and subethnic variants. A geographical reconstruction of historical
communities and comparison with their ethnographic present might also answer
the question of a contemporary validity for ethnos as an indicator. Regarding
its comparison with the Sinitic superethnic system, the hierarchical organiza-
tion of their respective taxa and relative relationships between encompassing
landscapes might prove instructive.

On a final note to the conclusion of this assessment, I will attempt
a distillation of the primary landscape and ethnos model by reinterpreting
Kalesnik's definition of landscape as appropriated by Gumilev to describe
ethnos (cf. p.195). It is on this redefinition of ethnos that I will rest my argument for the potential of reinterpreting the Sinitic or Muslim superethnic systems using Gumilev's theory, and the assumed corresponding support for the theory from that operation. As the reader of this thesis has undergone a long road of constructing his/her own text from out of its fabric, the final conclusion is left to your imagination to compare any known population, its encompassing landscape, culture, and domesticates according to what has been presented, and judge whether the theory as presented here works accordingly. That it has explained aspects of the real world to me, and correspondingly stood up against such comparisons should be obvious. Accepting Gumilev's full programme without reservation, however, is not realistic and modifications are discussed throughout this study. But, irrespective of any ideological framework the model stands on its own, and thus consider the following points carefully:

(1) Ethnos actually exists as genetically homogenous parts of the earth's surface.

(2) Each ethnos is bounded by actual natural boundaries.

(3) Each ethnos possesses individual features that distinguish it from other ethnoses (cf. recognition, p.195).

(4) It represents not an accidental or mechanical combination of components, but a regular internally related pattern of structural characteristics.

(5) It is unique in space and time.

(6) It has territorial integrity (cf. p. 394).

(7) Internally it is morphologically heterogenous because it is made up of a number of lower ranking territorial and population complexes.

(8) At the same time, it is homogenous because the overall pattern of combination of its heterogenous components and structural characteristics are the same throughout the ethnos.

From these preceding points one may consider ethnos as a process, and when any population is compared to these propositions, as with any landscape, do they meet its criteria, and what then can be inferred about that set of
phenomena based on its interpretation through these criteria. Does this organization of the data then give us useful information about the relationships of that ethnos. It is upon these questions that I rest the argument and set forth the criterion for appraising the value of this assessment of Gumilev's work and the discourse surrounding it.


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