

INDUSTRIALISATION: MYTH AND DECONSTRUCTION

by

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Industrialisation: Myth and Deconstruction

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ABSTRACT

Two major problems have come to light in the 1980's to challenge our basic assumptions about the roots of prosperity and economic development. One is the gradual awareness that two hundred years of industrial activity have put us on the edge of possible irreversible ecological decline. The other is the failure of development strategies aimed at total industrialisation for the Third World. If we ignore the human aspects such as increasing impoverishment, fruitless urbanisation, famine, social insecurity, and cultural erosion, perhaps the most obvious indicator is the collapse in ability of Third World nations to cope with bloated debt payments.

Given the magnitude of these two global problems, one might expect that extreme industrialisation would be up for reassessment. It is not. Why is it that no matter how urgent and forceful the evidence, most people remain convinced that greater and more industrialisation is the groundwork upon which prosperity and a just human existence are based? This thesis offers a partial answer to that question.

Industrialisation has been discussed in a number of disciplines: economics, communication studies, environmental biology, and development planning, for example. The examination of industrialisation

here, however, considers it as cultural value, closely tied to the image of modernity and the basis of Western epistemology, science. Industrialisation is described as a paradox embodying both a utopian, popular side and an equally real dystopian counterpart, invisible to the faithful. It is argued that we are unable to accept a fundamental critique of industrialisation because it has achieved the status and power of myth. As such, it is integrated within our consciousness and has become an essential component of Western belief systems. We are unable to confront industrialisation because we are incapable of imagining alternatives.

The thesis begins with an analysis of industrialisation theories from different ideological perspectives. It then discusses the nature and function of myth, in the anthropological meaning of the term. This section centres on the role of myth as transhistorical messenger; myth as a kind of language within which conceptual possibilities are confined. Finally myth is used as an analytical tool to explain the ability and tenacity of industrial consciousness to shape interpretation and thus preclude serious criticism. This involves articulation of the mythological component in industrialisation, and a subsequent deconstruction of the Myth revealing the dynamic of obfuscation within which the industrial paradox is apparently resolved and the utopian vision of industrialisation is secured.

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INTRODUCTION

It is with some uncertainty that the human race approaches the twenty-first century. Holes in the ozone layer, acid rain, pesticides in the ground water, dead whales bloated with toxins, mercury poisoning, and of course the "greenhouse effect" all loom above us like the cloud behind the silver lining. And then there are the names: Love Canal, Three Mile Island, Bhopal, Minamata, Chernobyl, each one a metaphor for severe and permanent suffering. They may also be signposts in a likely future.

Many of us, of course, will not make it to the close of the millennium; natural disasters, disease, and starvation are claiming ever more lives in the Third World. In June 1987 the United Nations World Commission on Environment and Development issued its report after a three year study, undertaken on a global scale, after a three year study. *Our Common Future* is divided into three sections: Common Concerns, Common Challenges, Common Endeavours. The tone of the report follows in this vein, referring to "...the Earth as an organism whose health depends on the health of all its parts." (Brundtland, 1987, p. 1). Networks of relationships are interwoven in this comprehensive understanding, and a plea is made for a more holistic approach to world development and its environmental consequences.¹

Throughout 1987-88 a number of international scientific conferences were held on the ozone and greenhouse problems, each more urgent in tone than the last². Clearly, among large numbers of scientists, a

consensus has formed which has had an impact beyond the esoteric community of career environmentalists. Although the critique is not new, perhaps for the first time ordinary people are becoming aware that the earth is, in a general sense, one ecological system; environment issues are everyone's concern. The issues are larger than border disputes between the United States and Canada over who is responsible for the acid rain. The popular media have been instrumental in making environmental concerns common knowledge and in identifying the glaring link with industry.³ The earth, as a living organism, is clearly in trouble. The source of this crisis is primarily two hundred years of industrial development in the West. Why, then, given the urgency of the dilemma, is there no rioting in the streets, no radical change in public policy, no closing down of dangerous industries, no rigorous application of existing environmental law, and no immediate reassessment of development planning for the Third World?

The responses to these questions are complicated. There are scientific answers, economic answers, political answers, and social answers. There are also cultural answers. Part of the difficulty in formulating a serious solution to our environmental problems is that the identified source, industrialisation, has been perceived, historically, as the root of all good things. It has assured the West great affluence and power. Therefore, it is not without reason that Third World elites and development theorists join with multinational corporations and World Bank financiers in promoting industrialisation as the right and inevitable future for emerging nations.

This contradiction is addressed by many, particularly liberal reformists and appropriate technology supporters. Most often, however, the response is simply rhetoric and wishful thinking. The Brundtland Report is sadly typical.

The Commission's overall assessment is that the International economy must speed up world growth while respecting the environmental constraints.

Industry is central to the economies of modern societies and an indispensable motor of growth. (Brundtland, 1987, p. 89, 206)

In spite of all the evidence presented to the Commission regarding depletion of natural resources and environmental exigencies, the principle of accelerated expansionism remains inviolate. The message (try harder) may be clear, but the solution is not.

Why is it that we are unable to fundamentally question the nature and consequences of industrialisation? If we are indeed on the precipice of imminent ecological collapse as a result of our two hundred year orgy of environmental vandalism, why are we not shaken to our collective philosophical core? Industrialisation is more than a "motor" of economic growth; it is a belief system. As such, it must be confronted on a metaphysical level, not just in terms of practical concerns like technology transfers and spare parts for out-of-date machinery.

It will be argued in these pages that we are unable to engage in a profound reassessment of industrialisation because its utopian profile informs the very structure of modern Western consciousness. The

conceptual framework through which we interpret the world, identify problems, and construct solutions is shaped and confined by the understanding that science and technology form the basis of our epistemology and that their manifestation, industrialisation, is the only possible consequence of those inevitable human discoveries.

This idea finds its root in the Enlightenment and has been perpetuated over the generations through a number of institutional and informal mechanisms. It will be argued here that whatever other properties industrialisation may have, it also contains a strong mythological component which in both form and function is instrumental in the transmission of industrial consciousness across the generations.

Others have written about science, technology, or industrialisation as belief systems or ideologies. Jurgen Habermas, Herbert Marcuse, and David Dickson are only a few. Most describe technology or industrialisation as an instrument of domination associated with capitalism. Even when they include the Soviet bureaucracy (as with Marcuse) or Lenin (as with Dickson)⁴ there is a sense that this attitude was poached from capitalism. It is, however, also indigenous to Marxism. Consequently, because the term ideology may lead to distorted conclusions, and because First World, Second World, and Third World elites of whatever ideological tendency share the discourse of industrialisation, ideology is rejected in favour of myth as an explanatory framework here. Myth also allows us to appreciate the cultural consistency of values and beliefs in spite of enormous economic, political, and social changes over a 250-year period.

Georges Sorel, David Dickson, the Frankfurt School theorists, etc., have contributed to the exploration of consciousness and its modern nature. While these writers have been central in understanding the degree to which the modern consciousness has been shaped in accord with the exigencies of capitalist goals, we need to expand and extend our analysis and enquiries of this subject. The work presented here is in this spirit. The relationship between hegemony and consciousness is crucial in understanding the power of industrialisation as an idea. While the above writers are core theorists in this field, they all tend to view consciousness as a consequence of material and ideological historical developments. Thus it appears to be one result constructed over a long period of time. The concept of myth allows us to consider the nature of industrial consciousness as a set of propositions constantly renewed in each generation. This is useful because neither history nor human culture are static, yet we witness the same blind faith in science and technology today that Auguste Comte promoted in the early 19th century.

Also important as a tool of analysis in looking at myth in a modern context is Roland Barthes' essay "Myth Today". Semiotics is used here, rather than another "textual" analysis such as discourse theory or hermeneutics because it permits the simultaneous existence of opposite meanings without an apparent contradiction between them. How is it that two contradictory meanings are not in conflict? Semiotics allows us to see that what appears to be a non-dialectical polarity of interpretations is in fact a construction. Barthes connects this to the concept of myth, thereby facilitating an understanding of how this

paradox is obscured in a cloud of apparent resolution. Thus the myth can be deconstructed and its effective dynamic revealed.

This thesis is a theoretical proposal, the purpose of which is to deepen, extend and connect existing work; the subject is the shaping of industrial consciousness. This will involve an analysis of development theory and its relationship to our inability to admit the environmental crisis. Chapter One discusses theories of industrialisation in a short, representative survey from conservative, liberal-reformist, and radical points of view. This will illustrate that while these positions do have their obvious ideological antagonisms, they share a faith in industrialisation as the panacea for most Third World problems. Similarities and differences will be articulated before moving onto criticisms of the industrial attitude as proposed by those who argue for a more humanistic technology.

The Second Chapter introduces myth. Discussing it from an anthropological perspective, the work of Claude Levi-Strauss and his critics will be used to draw out particular functional characteristics. Important here is the dynamic through which the content of the myth (its message) is propagated across generations. Consequently, myth as language system and as historical memory will be addressed. Following this, it will be helpful to consider two examples where the concept of myth has been used to apprehend hidden or double meanings in modern events and experiences. The semiological approach mentioned above will be described here.

Chapter Three will articulate the Myth of Industrialisation, its relation to Modernity, and the utopia/dystopia paradox which presents itself in the Myth. Some connections will be drawn with industrialisation theories described in Chapter One and theories of myth in Chapter Two in order to further develop the metaphor. The Myth will be discussed in terms of four general promises which form its core and from which it takes its imperative and credibility. The purpose of this chapter is to illustrate that the concept of myth is not only viable as an organizing framework, but that it also offers significant explanatory potential as well.

Chapter Four will re-examine the Myth of Industrialisation with the purpose of exposing the actual process through which it shapes consciousness by structuring interpretative possibilities. Using theoretical contributions such as George Sorel's concept of *embourgeoisment*, Roland Barthes' articulation of a second order semiological analysis, and Herbert Marcuse's technological rationality, it will be possible to appreciate the power and tenacity of myth. In so doing, a deeper understanding of why we seem incapable of hearing fundamental criticisms of industrialisation will be achieved.

¹ For discussions on this topic less confined by the limitations of committee see, for example, Redclift (1984), Kneese (1979), and Welch and Miewald (1983). The latter primarily focusses on the First World.

² For example, The Global Green House Network—First International Conference, October 1988, Washington, D.C.; Developing Policy for Responding to Climatic Change, September–October 1987, Villach, and November 1987, Ballagio, Switzerland; The Changing Atmosphere—Implications for

Global Security, June 1988, Toronto. World Congress on Climate and Development, November 1988, Hamburg, Germany.

³ For example, see McInnes (23 April 1988), *Time Magazine* (19 October 1988), Shabecoff (19 July 1988).

⁴ See Dickson, (1974: 56-59).

CHAPTER ONE

THEORIES OF INDUSTRIALISATION

When discussing theories of industrialisation it is difficult to find a theory which defines itself as industrialisation theory *per se*. Much of the literature which discusses the subject focusses on describing the process rather than articulating the conceptual framework. Industrialisation itself refers here to the establishment, maintenance and promotion of a manufacturing-based economy rather than one based primarily on agriculture or natural resource extraction. A certain fuzziness obscures the term, however. It also refers to enterprises which are largely assembly based. Thus several of the so-called Newly Industrialised Countries are locations of assembly or parts manufacture rather than homes of complete industrial production processes. The term is further confused by the movement of the First World into the "post-industrial" age which has meant a move away from commodity manufacturing and a shift toward the transborder moving of information and business data.

Where theory does exist it is more generally termed development theory. This is also confusing; development can refer to political, agricultural, social, infrastructural, etc. Whatever the focus, however, all presume a modern economic base of industrialisation. In this sense theory of economic development is a *de facto* theory of

industrialisation. Although economic development often includes making agriculture more efficient and infrastructure more extensive, these are not the main areas of concern to Third World elites, international lenders, economists, multi-national corporations, etc. For other manifestations of industrialisation theory, it is necessary to cull the policies, recommendations and reports of such sources as governmental bodies, international lenders, multinational corporations, the United Nations, etc. Implicit in this material are theories of industrialisation. All programmes for change are developed on the basis that change is necessary and that it ought to take particular forms. Even when developmental programmes are social or agricultural in focus they often presume previous or concomitant industrial development.

World political and economic elites embrace industrialisation because they perceive it to be the motor of modernity. It had, after all, been the key to affluence in the West. At least, that is a common assumption. In the post World War II period several events occurred which precipitated the profusion of theories of development and industrialisation. This was the period when many colonies achieved independence, the International Monetary Fund and International Bank for Reconstruction and Development were established. The Bandung Conference saw the beginnings of Third World cohesion and the United States increased its political and economic hegemony.

At the same time, the United States was experiencing unprecedented prosperity. Technology and fibres developed during the war combined with an economy not devastated by the war, and America prospered

under a banner of free enterprise and consumer oriented production. The virtues of capitalism were an essential part of Cold War rhetoric. Theories of Third World development and industrialisation were dominated by the U.S. and were stamped with the characteristics of this period. Using the history of capitalism development in the Western world as a matrix, American political scientists, sociologists, and economists elaborated theories of "progress" for Third World countries which basically projected the Western past onto an Eastern future. By the 1960's, a period of great optimism and affluence in the West generally, "modernization theory" enjoyed wide acceptance, at least among Western political scientists, planners and economists.

Walt W. Rostow is perhaps the name most associated with the theory which promoted the history of Western industrial development as the natural and universal programme for human social evolution. Through his five stage theory of economic growth he effectively equates industrialisation with human progress. Throughout his elaboration, industry is the benchmark by which progress is measured. In describing the transition of traditional societies he writes,

A society predominantly agricultural--with, in fact, usually 75% or more of its working force in agriculture--must shift to a predominance for industry, communications, trade and services.

A society whose economic, social and political arrangements are built around the life of relatively small--mainly self-sufficient--regions must orient its commerce and its thought to the nation and to a still larger international setting. (Rostow, 1960, p. 18-19)

This goes beyond a programme of comparative advantage and clearly indicates the economic telos of all traditional societies is industrial manufacturing. Agriculture and resource extraction Rostow describes as the source of foreign capital acquired and accumulated with the purpose of developing industrial capital (Rostow, 1960, p. 12-23).

Stage one of the progression is termed Traditional Society. This is a "pre-Newtonian" phase marked by limited production where ignorance of modern science and technology stunt capacity for productive manipulation of the environment. It is further inhibited by an insufficiently entrepreneurial "frame of mind", a fatalistic value system and an inflexible social organisation (Rostow, 1960, p. 4-5).

Using the Newtonian revolution as a watershed of human history, Rostow defines his second stage as "the preconditions for take off". This period is also characterized by the centralization of political power as traditional elites struggle to maintain economic and political control against pressure from the new nationalist and rationalist movement pushing for modernisation. Entrepreneurs, willing to risk their accumulated capital, invest in new manufacturing enterprises and technology. During this phase a transition occurs in the traditional mind set and social structure which permits greater mobility of the individual within a more flexible hierarchy.

Rostow refers to stage three, the take-off, as "the great watershed in the life of modern societies" (Rostow, 1960, p. 7). At this point the old barriers to continual growth are finally superseded.

During the take-off new industries expand rapidly, yielding profits a large proportion of which are reinvested in new plants; and these new industries, in turn, stimulate, through their rapidly expanding requirement for factory workers, the services to support them, and for other manufactured goods, a further expansion in urban areas and in other modern industrial plants. (Rostow, 1960, p. 8)

Here industrialisation is synonymous with sustained economic growth. By intimation it is also associated with full employment and affluence. Take-off is followed by the fourth stage, the "drive to maturity". All aspects of the economy are effected by modern technology and the national income is readily reinvested to fuel the increasingly dynamic economy. At this point the national economy is integrated into the world system on the comparative advantage model. The quantity and quality of industry is again the benchmark by which growth is measured. Technology has become more refined and complex.

Stage five is the "age of high mass-consumption", where the leading sectors of the economy are directed toward the production of consumer goods and services. Furthermore, after a nation has reached this consumerist Nirvana, the affluent society will allocate increased resources to social welfare and security, thus achieving social, as well as technical maturity.

A constant theme in Rostow's theory and clearly an essential component in the view of development he represents is the Westernisation of attitudes. Each phase involves a move away from traditional values, notions of static hierarchy and decentralised social organisation. These qualities inhibit entrepreneurial risk-taking and limit rewards for personal endeavour. The aggressive, self-motivated individualist, capable of accumulating capital and willing to invest it must be convinced that unlimited personal gain is a virtue. He or she must also understand science and technology to be the vehicle for ultimate attainment of all material, social and political goods. Clearly a significant re-structuring of consciousness is assumed by Rostow. He never really articulates this process, but it is a crucial prerequisite of industrialisation.

The idea spreads not merely that economic progress is possible, but that economic progress is a necessary condition for some other purpose, judged to be good: be it national dignity, private profit, the general welfare, or a better life for the children. (Rostow, 1960, p. 6)

Note the use of passive voice here. The deep radical transformation of societal norms implied in this statement simply occurs. The very idea of "economic progress" as a universal concept and value is assumed. Similarly, notions such as evolutionary change, linear development, change as necessity, efficient, increased production and sophistication of technique are promoted as values.

Rostow's five stage theory of economic growth has been much criticized and it is not the purpose of this brief synopsis to present it for further general criticism. "Take-off" theory is summarized here because it represents a yet popular approach to Third World development, emphasising Western values like individual ambition, autonomy of decision and freedom of action imply great prosperity and achievement. Although other writers may be more refined in their articulation, the same theme of evolutionary industrialism as an inevitable expression of human nature has been reinforced. Although David E. Apter's and A.F.K. Organski's well known works on modern political development focus more directly on political change, they both continue the Rostow approach, and both are describing what is basically a theory of industrialisation.

Organski's book title *The Stages of Political Development* is an obvious reference to Rostow. He organises political development around four stages with the first being "primitive unification". The author himself relates this to Rostow's sequence, stating this phase ends approximately at the point of Rostow's "take-off" (Organski, 1965, p. 8). The purpose of this phase is to extend and consolidate centralised control. Stage two sees a new class of industrial managers assume power, an economy built on industrialisation and the establishment of a national identity. The function of this political development (be it bourgeois, Stalinist, or fascist) is to facilitate economic modernisation, that is, industrialisation. Like Rostow, Organski suggests a new elite must be established in order to promote the necessary step of capital accumulation and entrepreneurial investment.

In stage three Organski suggests the people and the state are one. They work in social harmony for their mutual benefit rather than exhibiting the exploitative relationship characteristic of stage two. As with Rostow's stage of "high mass-consumption" this involves at least partial development of a welfare state in order to protect workers and enhance the further development of the stable industrial society.

Like Rostow, Organski also predicted a final stage characterised primarily by the advanced quality of its industry. Organski's theory of political development is integrally tied to the development of a modern economy, that is, one centred on constantly expanding industry. Organski also recognizes that for the transition from the traditional to the modern to occur, those committed to achieving industrialisation must gain control. The function of this elite is to promote accumulation of capital and facilitate conditions which encourage its investment in industrial sectors of the economy. Rostow and Organski differ slightly on the composition of the elite. Rostow suggests a power struggle between traditional, landed elites and modern-minded, Western-trained elites in which the modernising factions eventually gain dominance in a kind of Kuhnian paradigm shift.

For Organski, the elite is an aggregate of the traditionally powerful land owning class, the religious leaders, the military and a small group of foreigners resident in the country to promote their own economic interests. The two modernising elements in this composition are the foreigners and the military (Organski, 1960, p. 47-49). Although

Organski's approach is primarily descriptive, he does make oblique references to the need for a new attitude at least within the elite if a modern economy is to be developed. He alludes to the profound nature of this change in discussing the impact of the modern, foreign element:

Unlike the other elite groups, these foreigners represent a modernising force and the effect of their presence is highly disruptive to the traditional society.

The nature of that disruption is not elaborated. However, he adds later,

In a stagnant society dominated by a landed aristocracy, the paths of upward mobility are few. (Organski, 1965, p. 49, 50)

In these passages Organski pointedly distinguishes indigenous elites from the modern foreigners. Although he is less explicit than Rostow, Organski too is indicating that the traditional "frame of mind" (to quote Rostow) must be transformed, and that the character of the new world view will be defined by the modern West. Furthermore, this change is the work of a small group who hold a disproportionate degree of power presumably because of their economic connections with the West.

Organski here associates stagnation and social inflexibility with the indigenous landed aristocracy and by extrapolation an agriculturally-based economy. Further, he equates a "stagnant" society with one that does not include a mobile hierarchy. Although a traditional society may have a highly stratified social organisation it may be static, such as with the caste system; or movement within the hierarchy may be tightly controlled by social codes such as in a system of elders. Or perhaps a marriage arranged by others will determine one's movement within the

hierarchy. Organski's point is that individuals must be in charge of their own social and economic advancement if they are to be encouraged toward self promotion. Without the chance of personal gain there is no incentive for an individual to engage in the accumulation and investment process so important to capitalist development. Organski's agenda is to see movement away from an agricultural-based economy dominated by traditional landed elites and gravitation toward an industrial economy dominated by a modern bourgeoisie.

This radical reconstruction of the indigenous mind requires the total assimilation of industrial consciousness. Rostow and Organski (and as we shall see, Apter) believe they are merely facilitating the inevitable unfolding of human history; they are not obliged to argue any of their assumptions or advice because when they project a First World history into a Third World future they are simply stating the obvious. Because these theorists have completely assimilated industrial consciousness themselves, they fail to see the ideological component or possibly negative consequences of industrialisation.

Rostow from an economic point of view and Organski from a political approach both delineate a similar theory of industrialisation. It relies heavily on an interpretation of Western intellectual and economic history for its programme. The theory is Newtonian (scientific), Darwinian (evolutionary), and Smithian (market centred). What Rostow, Organski and other modernisers share is the premise that shaping a modern consciousness is an essential and primary step in the industrialisation process.

In the process of distinguishing the traditional mind from the modern mind, David Apter has, through the concept of choice, repeated the accepted view shared by Rostow and Organski. "To be modern means to see life as alternatives, preferences, and choices" (Apter, 1965, p. 10). His meaning is not immediately clear; societies and individuals in them have always been faced with decisions. Although traditional societies may be guided by religion and kinship (two reasons he uses for lack of ability to choose), there are still decisions to be made in life. Furthermore, to suggest there are no choices is to intimate that traditional societies are harmonious. This does not seem likely. No doubt there were/are factions, power struggles, disagreements, dissatisfactions, natural disasters ,etc., to be dealt with in most cultures. Resolutions must be found, conflicts must be resolved, anti-social behaviour curbed and hardships alleviated, to postulate only a few instances when choices are made in traditional societies. Consequently, it must not be choice *per se* to which Apter refers. In fact, he states it is specifically self-conscious choice based on rationality, debate and discussion.

It can be argued that Apter is blinded by his Western assumptions of indigenous societies. Why is the concept of reason or the activities of discussion and choice particularly modern? Traditional peoples make choices based on belief structures, customs, family and community needs, etiquette, alliances, possible consequences, and other factors, just as we do. Decisions are made which conform to the internal logic of particular societies. These are reasoned choices.

Apter's modern choice-maker as described would appear to be the post-Enlightenment, capitalist, Western individualist. When Apter refers to rationality, he is universalising a culturally and historically specific concept of reason. This is reinforced by his assertion that "debate and discussion are characteristics of modernity (Apter, 1965, p. 10)". To suggest that the practice of persuasion is known only to his narrowly defined modern individual is absurd. Apter does not explain why traditional peoples are unable to escape the constraints of religious dogma in their decision making while modern decision-makers are not likewise constrained. Clearly Apter was not writing in the 1980's when, if not astrology, at least religious fundamentalism has achieved significant credibility in American politics. Nevertheless, Apter's point is that an independent, free thinking, and rational individual is the cornerstone of a modern society; indeed, only modern society can provide the environment for such a creature to exist. "Self-conscious concern with choice has led to an attitude of experiment and invention that has changed man's entire outlook. Nature became controllable" (Apter, 1965, p. 10).

"Experiment" and "invention" evoke associations of science and technology. The industrial entrepreneur exercising his rationality and choice, invests his accumulated capital and successfully bends nature to his will. Again Apter, describing principles central to the character of Western economic history, universalises both the concepts and the

process. He fully presumes that all peoples wish to control nature and find it morally right to do so.

Using choice as an organising principle, Apter connects development, modernisation and industrialisation. Three conditions must be present in this concert.

A social system that can constantly innovate without falling apart (and that includes among its essential beliefs the acceptability of change); differentiated, flexible social structures; and a social framework to provide the skills and knowledge necessary for living in a technologically advanced world. Industrialisation, a special aspect of modernisation, may be defined as the period in a society in which the strategic functional roles are related to manufacturing. It is possible to attempt the modernisation of a given country without much industry, but it is not possible to industrialise without modernisation. (Apter, 1965, p. 67)

This quote is interesting, not just because it illuminates Apter's theory and point of view, but because it sums up post war, capitalist theories of industrialisation. Like Rostow, Organski and many others too numerous to detail, similar interpretations and projections have been offered by Western political scientists, economists, and sociologists. Note the vocabulary: "constantly innovate", "acceptability of change", "flexible", "technologically advanced world". These are words of dynamism, progress, newness, constant transition, and movement. They reflect the history and values of the industrialised West. It is an image of a society continually evolving. In this interpretation industrialisation is a process tied to human evolution. This modern,

free thinking and free acting individualist is a human dynamo shaping history and future. Here is life as performance. "Social system", "social structures", "social framework": Apter believes traditional social formations inhibit modernization because they are inflexible and non-innovative.

Although Apter writes of these attributes as absolutes it is unlikely that any species that does not exercise some degree of adaptability can survive. As with his concept of choice, it is not flexibility and innovation *per se* which concern Apter, but rather these qualities as they relate to the purposes of the West. Apter admits this himself. In traditional societies, he writes, "innovation is made to serve tradition (Apter, 1965, p. 85)". There is also private property, hierarchy, and inheritance (p. 86). These may be shared attributes with Western societies but they do not count as modern because they do not serve the same dynamic functions as under capitalism. Apter, like others, identifies changes in world view, values, belief system and social organisation as primary to the development of mass industrialisation on a Western, capitalist model.

Although they openly promote destruction of traditional ways of thinking and their replacement with a completely foreign consciousness, these theorists consider this cultural violence a natural evolution. They merely facilitate and quicken the pace of the inevitable. Consequently, a cultural construction becomes naturalised as human development. The personal and social modernisation articulated by Rostow, Organski and Apter is the essential first phase in a theory of industrialisation

popular in the post war period. It was presumed that the eventual rewards of industrialisation--economic, social, cultural, political--would more than compensate for perceived losses and insecurities among traditional peoples.

By the 1960's these post-war American theories of development/industrialisation were being increasingly criticised from a number of quarters. Anthropology, sociology, and communications, as well as political studies and economics all provided (and continue to provide) general and specific analysis of the shortcomings of modernisation theory. Within this critical process, the nature of change in the so-called developing world was questioned; developing what for whom, asked the more cautious. Consequently, issues of social and cultural impact, distribution of wealth, as well as the central concern of who controls the developing or underdeveloping process are still points in an ever more complicated and esoteric debate. ¹

Even focussing on industrialisation, it is impossible to synthesise without being guilty of some degree of reductionism. Some amalgamation is required here, however, as this discussion of theories of industrialisation intends to be only representative of positions in the debate. It does not pretend to be a comprehensive survey. Aiden Foster-Carter(1967) synthesises the debate from a Kuhnian point of view. He sees the evolutionary, take-off theory of Rostow to be a traditional position increasingly challenged by the new paradigm represented in the writings of Andre Gunder Frank. Thus Foster-Carter does not so much

separate theories by discipline or political point of view, as he does by whether they reinforce the old paradigm or challenge it.

From this approach all non take-off development theory is homogenized together as a negative character, not a constructive new alternative. It also creates two poles, synthesizing non-Marxist dependency theory into the Rostow pole, extreme reductionism indeed, considering the anti-imperialist element in the former approach. It is also simplistic to use the early position of Frank, what Foster-Carter himself refers to as "crude", as the identifying character of the challenging paradigm. Furthermore, if this does represent a true paradigm shift then at some point all future students will be trained within this new dominant framework. But by Foster-Carter's own description, it is a Marxist school. Does this mean these future intellectuals, mostly from middle and upper class communities, educated in elite institutions known as bastions of the status quo will easily move into a Marxist paradigm for their life's work? Not likely. By focussing on his Kuhnian argument Foster-Carter avoids the very real political core of these positions. In the natural sciences researchers from radically different political positions can still practise within a Newtonian paradigm. It is not so easy to de-politicise political studies. Consequently, although, he offers an interesting approach to development and underdevelopment theory, Foster-Carter's synthesis is not useful as a model for synthesizing theories of industrialisation for the purpose of this paper.

Philosopher Geoffrey Hunt also synthesizes theories of under/development into two poles. He refers more directly to economics, and subsumes Keynesian theories within the neo-classical model. Hunt synthesizes theories into those based on the principle of atomism, and those based on the concept of an organic whole. For the atomists, all explanations can be reduced to quantitative factors; for example, there is a lack of investment capital in the periphery. Rostow-type theories could be said to emanate from the atomistic approach. All problems are solved by issues of quantity change--increase investment capital and reduce government spending, increase modern education and reduce voodoo. However, the radical position, Hunt writes, describes the underdevelopment condition of the Third World as a modern condition in direct correspondence to the historical economic development of the capitalist West. Thus it is the result of a relationship, not atomistic development. His main point is that when looking for answers the atomistic development provides a philosophical basis for individualist solutions, that is, "poverty is 'their problem' and wealth is 'our achievement'" (Hunt, 1986, p.55). On the other hand, the relativistic, organic whole approach must necessarily seek solutions in a global context.

[In a traditional development theory framework] the remedy is conceived in terms of modernisation, piecemeal reforms, and assistance responding to the quantitative scarcity of certain things (capital, technology, skilled people, etc.) or the quantitative excess of people.

[In a radical development theory framework] the remedy is conceived in terms of resistance, liberation, and revolution responding to the qualitative constraints (global economic

structure) of capitalism on the laboring and marginalized majority (imperialism). (Hunt, 1986, p. 65-66)

Others, such as economists Chris Edwards and Gerald Meier, are less reductionistic in their syntheses of developmental economics. Discussion of a centre position between these two poles admits an important dimension to the debate. It allows an examination of Keynesian approaches on their own bases, distinct from the extreme free enterprise and free trade position of the subjective preference school. This is important for the present argument because it is this middle ground which helped shape the nature of industrialisation theory in sources such as ECLA, the Brandt Report and the non-Marxist dependency school of development theory.

Against the belief in comparative advantage promoted by traditional economists, Raul Prebisch argued that in fact a structural imbalance existed in international economic relations. A number of coincident issues such as unequal access to capital and technology, as well as systemic negative terms of trade meant that the affluent countries and the so called "developing" countries did not share equally in post war economic growth. Furthermore, it would only get worse. (Meier, 1984, p. 191-193)

A detailed articulation of the argument behind Prebisch's theory is unnecessary here.² The main point of his early theory, however, was that Western style industrial development was essential and that it should take place in relative isolation from U.S. domination if national

control was to be ensured. This would be affected through a programme of (among other factors) protective tariffs and import-substitution oriented industry. Thus he saw autonomous industrial development in the periphery as the key to raising the standard of living of the sixty percent of the population of Latin America living in extreme poverty (Chilcote, 1984, p. 24-25).

Unlike the stage theories of industrialisation promoted by American modernisationists like Rostow, Prebisch's early import substitution theory of industrialisation does not see industrialisation as necessarily the key to abundance for all. From Prebisch's point of view, however, it would be if it were planned with distributive justice as its fundament, rather than an unbridled faith in market theory and its long term, trickle-down promise. Without industrialisation, on the other hand, no mass improvement could be hoped for. Celso Furtado and Osvaldo Sunkel, described by Ronald Chilcote as also within the reformist tradition (Chilcote, 1981, p. 300), however, criticised the import substitution strategy. Osvaldo Sunkel maintained that autonomous development proved not to be viable in the long term because large foreign firms took over the businesses of local entrepreneurs. This is part of the internationalisation of national economies linked together through the interlocking of productive structures and consumption patterns. He goes so far as to state that "the import-substitution process of industrialisation has therefore become the corporation's strategy for penetration of foreign markets...supported by external [assistance]" (Sunkel, 1972, p. 525).³ Although by 1971 Prebisch himself was downplaying the virtues of import substitution and was promoting large-

scale foreign investment (Prebisch, 1971, p. 7, 15), this was a question of tactics, not methods or goals. Very much the Enlightenment heir, Prebisch challenges his audience to,

...recognise the imperative need for calculation and rationality in face of the constant advances of science and technology: the need to take advantage of this progress to improve the lot of the Latin American population and to fulfill designs extending beyond the economic system. (Prebisch, 1971, p. 19)

This is clearly a call to get on the modernisation bandwagon. Science and technology, carefully manipulated through reason, are the very manifestations of progress. They will benefit all in a multiplicity of ways. The future is not specified because it is presumed there are no limits to the bounty possible in this programme so popular with elites (and many others) of most nations. There is no question here or elsewhere in this important presentation to the Inter-American Development Bank that industry itself may harbour negative unintended consequences, such as destruction of the rain forest in Brazil or the Bhopal accident in India. Development and progress are defined as increased consumption of goods and services. Industrialisation is the dynamic which yields these rewards.⁴

There can be no doubt that because of the urgent need in the Third World to relieve the grinding poverty and mass malnutrition, the faster the method of doing this the better. Subsequent to the theory of industrialisation which emitted from ECLA, represented here by the early

Prebisch, the New International Economic Order offered a broad economic theory which attempted to address short term, as well as long term strategies. The programme for the New Order found its expression in the Brandt Commission Report *North South, a Programme for Survival*. The schizophrenic nature of the report attests to the power struggles involved in its deliberations. It also places its contribution to industrial theory building within the liberal reformist tradition discussed here. By no means narrow in the interpretation of development, the Report makes necessary social connections between such subjects as hunger and arms spending, population growth and environmental damage.

Although there were moderate, as well as radical states within the uneasy coalition, the document eventually agreed to was somewhat liberal reformist in complexion. Two central elements in the contribution of the Brandt Report to industrialisation theory are an evaluation of multinational corporations and the role of international trade. Noting that import substitution has its limits, the Report states that export of manufactures is an essential component of the economic future of the developing countries. Tariffs and quotas of the Northern countries prevent effective access to more affluent markets (Brandt, 1980, p. 174-77). Of course, this is nothing new. GATT (General Agreement of Tariffs and Trade) and UNCTAD (United Nations Conference on Trade and Development) had been working in this area for years. The Brandt Report, however, consolidated intellectual resources, world economic histories and most important of all, Third World support (no

matter how tenuous) in order to promote an articulate, coordinated set of demands for truly meaningful change.

One chapter in the Report is devoted to "transnational corporations": investment and sharing of technology." While being very unrestrictive regarding expatriation of profits, concern is expressed regarding access to technology and patents. Ninety-six percent of the world's research and development spending is spent in the North and the transnational corporations hold most of the patents. Because of the weak bargaining position of the developing countries they are unable to obtain autonomous control of patents but too frequently provide a cheap location and resources for the multinationals to produce. Furthermore, they are unable to convince the big corporations to direct their research goals toward hi-usage but low profit "appropriate" technological research (Brandt, 1980, p. 194-96). "At present barely one per cent of spending of research and development in the North is specifically concerned with the problems of the South; whereas, 51 per cent is devoted to defence, atomic and space research " (Brandt, 1980, p. 197-8).

Hans Singer and Javed Ansari also discuss this central role of the major international corporations as conduits of essential technological development. In their book *Rich and Poor Countries* there is a chapter similar to Chapter 12 in the Brandt Report. In "The Multinational Corporations as an Agent of Investment and Technology Transfer to Developing Countries" Singer and Ansari state very clearly that "the dependence of the poor countries on the rich is fundamentally

technological in nature." The authors agree with the Brandt Report that "much of the new science and technology has little or nothing to contribute towards the solution of the problems of the [late developing countries]." Furthermore, they add, many developments had been detrimental generally, as with problems of pollution due to industrial and urban growth, and more specifically as with the development of synthetic products which destroy a country's primary commodity market. (Singer and Ansari, 1977, p. 207) Thus Singer and Ansari's argument with modern industrialisation is the same as the Brandt Report--it has been structured to benefit the North and the South is not powerful enough to reshape the equation.

Other difficulties arising in using the multinational corporations as a means of transferring technology to the Third World. One important reason these companies go to the poorest countries is to take advantage of the cheap labour. Consequently, it is likely the most modern, labour efficient equipment would be installed in the home countries where labour costs are high. While the level of technology in the developing countries is high enough to eliminate (or avoid initiating) a significant number of jobs, the most modern equipment continues to be inaccessible.

Another problem may be that the multinational corporations are geared to economies of scale. This means a commodity must be quickly and aggressively marketed to a large number of consumers affluent enough to purchase their product. Thus limited runs of different items with a high use value and low price, oriented to filling the urgent needs of most Third World people are not in the interests of the multinationals. As

Singer and Ansari remind us, "The multinational corporation is a 'profit-seeking animal' and...very little is to be gained by trying to convert it into a public service (Singer and Ansari, 1977, p. 211)".

The proposed solution suggested by the authors to the knot of problems and benefits concomitant with the courtship of multinationals is an interventionist one. Through government policy and regulation these large corporations may be controlled and used to the benefit of both partners (Singer and Ansari, 1977, p. 211). The authors also assume that development and economies are to be planned. Clearly this position is similar to the premise of the Brandt Commission Report and is consistent with the liberal reformist tradition. It further illustrates the need to allow a middle ideological position between the conservative Rostowans and the Marxists when discussing industrialisation theory, even though the liberal reformist tradition is fundamentally capitalist. It is this crucial question of intervention which determines much in the nature and role of industrialisation in different countries.

In its publication entitled *World Bank Operation: Sectoral Programs and Policies* the World Bank devotes one section to industry. The Bank, an undeniable creator of *de facto* industrialisation theory, does not include transfer of technology as a problem in its list of obstacles to industrial growth in the Third World. The "obstacles" are described in terms of lacks. We are reminded here of Geoffrey Hunt, who suggests that because of an atomistic attitude it is typical of what he terms "traditional" development theory to seek causes of underdevelopment in the lack of particular elements (Hunt, 1986, p. 56). The World Bank

follows this pattern, listing the obstacles as a "shortage of skilled labour, management, entrepreneurship", "shortage of capital resources", "inadequate domestic markets", "limited access to markets", "inadequate infrastructure", among others.

The "Strategies and Policies" developed by the Bank in order to facilitate industrialisation and overcome these obstacles and respect social problems such as employment, income distribution, and environmental issues are based on traditional market economic theory. Industry is described as private in nature (World Bank, 1972, p.99).⁵ Consequently, emphasis is on private enterprise, and government intervention is strongly discouraged.

A great deal of importance must be attached to policies and incentives which will have a desired impact on the motivations of private entrepreneurs and the investment climate in general....There is always a danger that excessive government intervention may inhibit the mobilization of entrepreneurial talent and the decentralisation of initiatives and decision making which are necessary for rapid industrial growth. (World Bank, 1972, p. 99)

In the shaping of industrial theory, the Bank uses the language of traditional economic and industrial theorists: "rapid pace of scientific and technological progress", "cost-benefit", "comparative advantage", "specialisation", "efficiency". However, after adamantly denouncing government intervention, there is a suggestion that at times moderate protection and some monetary controls may prove useful in the early

stages of industrialisation. This may be particularly important, when an initial period of import substitution is needed in order to establish indigenous industry (World Bank, 1972, p. 100-101). It may appear that industrialisation theory has come full circle and is back once again at Rostow and Organski. These minor concessions regarding even minimal intervention, however, mark World Bank industrialisation theory apart from those earlier works by illustrating greater sensitivity to indigenous capitalists. This is appropriate, considering the Bank's promotion of entrepreneurialism as a key factor in industrialisation.

It should also be noted that only government restriction of free enterprise counts as intervention. No matter how extreme or even violent Western intervention into the economic, political, or cultural affairs of sovereign Third World nations may become, this never qualifies as intervention; it is aid. The industrialisation of consciousness is similarly invisible.

It has been argued here that when considering theories of industrialisation, the least distorting synthesis is one which distinguishes liberal reformist (Keynesian) positions from conservative (market theory) approaches. Having stated this, it is still important to remind ourselves that these are both capitalist positions. They are, after all, as extreme reductionists like Foster-Carter and Hunt describe them--on a distant pole from Marxist industrialisation theorists.

As with conservative and reformist industrialisation theories, Marxist theory is often to be gleaned from political and development

theory. Indigenous to Marxism, however, is the belief that full modernisation and industrialisation are necessary in the progression toward human freedom and well-being. This is the case for most neo-Marxist stage theorists, as well as more orthodox Marxists. Marx himself expressed his sense of evolutionism and faith in industry in his article of 1853 published in the *New York Daily Tribune*. The language of modern industrial change, "telegraph", "electricity", "education", "steam", "railways", and descriptions of fundamental social changes initiated by the British combine in what may be interpreted as a rationalisation of British imperialism in India. "Bourgeois industry and commerce create these material conditions of a new world in the same way as geological revolutions have created the surface of the earth." (Marx, 1972, p. 584, 588). This is further elaborated in *Capital*. "The country that is more developed industrially only shows to the less developed the image of its own future". Here is an overwhelming sense of inevitability, of human nature being manifested and unravelled in what Marx strongly describes as "the economic law of motion of modern society" (Marx, n.d., p. 19-20). Thus, in Marx's own work his belief in stages of social evolution and his acceptance of industrialisation as the motor of progress has associations with such 20th century writers like Rostow, as well as the reformists described previously. Certainly in his reference to India, his objection to the British was their brutality. Otherwise, England was the "unconscious tool of history" in its modernising role (Marx, 1972, p. 582).

Some major questions of fundamental disagreement with capitalist industrialisation theory are, who controls/owns the means of production,

and on what basis is distribution made? One of Marx's most articulate polemics against an individual was against Liebknecht, one of his own disciples, on precisely these issues. In his "Critique of the Gotha Programme" Marx discusses the difficult nature of equality and fair distribution. Both appear almost cliché simple on the surface. But upon closer examination, he writes, there is indication that they may be used as double entendres with quite the opposite meaning possible. Who defines "fair", he asks; the bourgeoisie already think distribution is fair (Marx, 1977, p. 566). And as for equality, it may result in extreme inequities unless natural differences in capabilities and aptitudes are accounted for (Marx, 1977, p. 568-9).

In *State and Revolution* Lenin links all these issues together when he clarifies that the state is not smashed at the time of the revolution but is taken over. Industry is not destroyed. Rather, capitalist economic relations are replaced by common ownership of the means of production. A gradual transformation of society occurs smoothly to ensure a continuation in production and the future goals of fair distribution and "further progress" (Lenin, 1965, p. 120).

This remains the central thrust of modern Marxist thinkers. Industrialisation is still considered the most identifying feature of progress and the key to an abundant and egalitarian society. The goal is to "catch up" with the West in economic terms but to be socially and politically superior. Although a very different society is envisaged, the vehicle to achieve that community is the same as capitalist societies-- modern industrialisation.⁶

This is illustrated in Stalin's report to the 18th Party Congress in 1939.

From the standpoint of the degree of saturation of industry and agriculture with new machinery, our country is more advanced than any other country, where the old machinery acts as a fetter on production and hampers the introduction of new techniques. (Stalin, 1972, p. 347)

Although agriculture is mentioned, it has been subsumed into the subject of "new machinery", the real measure of advancement. Thus technology and progress are directly linked. "Old machinery" on the other hand, fetters and hampers such advancement. This attitude is entirely consistent with Marxist sentiments and projections. Stalin then links this technical accomplishment to success in social and political realms.

The remnants of the exploiting classes have been completely eliminated...the workers, peasants and intellectuals have been welded into one common front of the working people,...the moral and political unity of Soviet society has been strengthened. (Stalin, 1972, p. 347)

Leaving aside the low points of "unity" and "elimination" such as the forced collectivisation of the Ukraine and the Moscow trials, there is a clear connection here between technological progress and social progress. The implication that the moral superiority of communism has harnessed technology to human needs and consequently fulfilled its latent promise only under communism exudes from his speech. It seems

that the Soviet Union under Stalin had surpassed Walt Rostow's fifth stage of economic growth and moved onto a higher moral plane. The dynamic of this progression, however, was still modern science and technology.

In his report to the Seventh Summit Conference of Non Aligned countries in 1983, Fidel Castro also emphasized the key role of science and technology in the communist revolution.

Today, it is perfectly clear that industrialisation--as a process whose effects are felt in all sectors of the economy, mobilizing a growing portion of national resources for the development of technically advanced economic and technical reproduction--is a historic imperative for our countries; it is the path that we should take in order to have access to development, modern technology and contemporary civilisation itself. (Castro, 1983, p. 121)

Here again are the issues we have been discussing. Modern technological change is not only necessary and good, according to this passage; it is also an inevitable part of human evolution. In fact, without it even contemporary civilisation is withheld. There is an urgency and an impatience here. Castro goes on to articulate how the Third World countries have been prevented from achieving modern industrial status through domination of the world economy by the West. The underdeveloped countries are unable to repeat the development path of the industrialised West because historical circumstances are very different now (Castro, 1983, p. 127). The underdeveloped countries do not control their own economic opportunity and direction. This question is a

central issue in the Marxist contribution to industrialisation theory. If Third World countries controlled their own economies, access to modern technology, markets and transportation, they would be able to achieve full industrialisation, with its implicit promises of abundance, fair distribution, and social harmony.

Much research has been done which substantiates this and it is, of course, the argument of Marxist dependency theory. Andre Gunder Frank has described this structural disempowering process, "Although the new highly industrialised countries may have been at some point undeveloped, they were never underdeveloped", a situation which he defines as an active process, not a lack of process. This was in fact an integral component of industrialisation in the West (Frank, 1969, p. 3-5). Frank's zero-sum approach was a significant contribution to development and industrialisation theory. Although he and others continued to criticise and refine the details, its impact has been significant⁷. For example, Samir Amin and Emmanuel Wallerstein added further analyses to help us understand why industrialisation occurred rapidly in the West but has been sporadic, uneven, minimal or non-existent in the Third World. Taking a macro view of dependency, Amin suggests domestic economies in the periphery have been in fact disarticulated to the benefit of international capitalism. Classes, capital accumulation and division of labour are also global in scope. He refers to a world bourgeoisie and a world proletariat (Amin, 1974, vol.1, p. 24). Consequently, accumulation, and economic practises in the periphery are conditioned by external factors and this prevents an aggressive dynamism from developing. The

underdeveloped countries are not pre-capitalist or dualistic economies but are "peripheral capitalist economies (Amin, 1974, vol.2, p. 461, 599".

Emmanuel Wallerstein, too, views economic development in a global perspective. He also confirms the unlikelihood of full industrialisation ever occurring in the Third World. Reviewing the development of the world capitalist economic system in terms of stages, he considers stage three as the phase of industrialisation. A corollary to increased industrial production was the need for greater access to raw materials and later an expansion of markets. Rather than the periphery moving toward core status, the powerless nations become even weaker. Thus the world capitalist system becomes consolidated (Wallerstein, 1974, p. 408-414). In both Amin and Wallerstein's analyses industrialisation is not an inevitable phase in the economic evolution of societies; it is an expression of an international power imbalance. Consequently, poor industrialisation in the Third World is a possibly permanent feature of the world economic system.⁸ At the same time, the critique of Amin and Wallerstein, like Frank (and many others) is focussed on why and how industrialisation in the periphery is stunted, distorted or marginalised.

As we have seen with Wallerstein, stage theory is not entirely the sole property of post war modernisers. James Petras, in his essay "Toward a Theory of Industrial Development in the Third World", also pins development to stages of accumulation.

The process of capitalist industrialisation in the Third World can be understood through an analysis of the interrelation of different stages in the accumulation process in the West and

the corresponding impact it has on the accumulation process in the Third World.

Stages of Accumulation

<u>Third World</u>	<u>West</u>
pillage	primitive accumulation
primitive accumulation	normal accumulation
normal accumulation	fictitious capital

(Petras, 1984, p. 75)

At issue here is the retarding effect of Western development on accumulation in the periphery. The impact of the interrelation goes from North to South. Thus industrialisation is not a reciprocal interdependence but a situation where the West leads and the Third World follows. Petras's description of the "normal accumulation" stage is even more structured, being comprised itself of six phases. Different Third World countries get stuck at different places along this evolution. Petras, like many others (as mentioned by Geoffrey Hunt) describes underdevelopment in terms of lacks: lack of capital, lack of infrastructure, lack of entrepreneurship, lack of markets, etc. (Petras, 1984, p. 80-81). Thus Petras agrees that industrialisation is an evolutionary progress which occurs in stages defined primarily by Western economic history. If the Third World has been inhibited from travelling smoothly along this continuum, it is because the developed countries have presented obstacles in a number of direct and indirect ways. Although there is not much hope for its achievement, the goal for Third World countries (as defined by almost everyone) is still First World style industrialisation.

But even the underdevelopment theorists miss the contradiction. As they argue themselves, Westernisation and minimal industrialisation of their countries has resulted in growing impoverishment, environmental decline, political disturbance and social rupturing. They do not make this connection, however, and continue to promote industrialisation as the motor of all social and political good.

Although those who promote industrialisation dominate development theory, there have been those who are critical of untempered and unquestioned industrialisation. Robert Sutcliffe argues that while the theoretical basis for industrialisation has been the fulfillment of human needs, this had not been the case. Or, perhaps a different structure of industrialisation may have met human needs better, noting that "actually existing industrialisation" has been directed largely toward the military (Sutcliffe, 1984, p. 125, 123). Perhaps because of our level of consumer affluence in the West, and because of our almost religious faith in science and technology as the origins of abundance (not to mention our ethnocentric view of the world), we fail to notice that the significant majority of the world's population does not enjoy an even remotely similar standard of living.⁹

The strongest criticism of rampant industrialisation, however, comes from an "appropriate technology" point of view. This is not a critique of industrialisation itself. Rather, it is an objection to the grand scale of most projects and lack of thoughtful assessment regarding local needs. Two major representatives of this area of criticism are Hazel Henderson and E. F. Schumacher.

Henderson believes that the days have passed when we equated technology with progress. We are well aware now, she maintains, that there is often a negative impact on populations, social structures and ecosystems (Henderson, 1978, p. 303). This conclusion is not sustained by the general state of developmental theory. As has been discussed here, from political left to right, those who promote "progress" for the Third World do indeed see industrialisation as either the very manifestation of progress or the vehicle by which progress will be obtained (even if it is defined in social terms). Although critical of the lack of social responsibility which dominates the scientific community, Henderson propagates the idea of more equal progress. Through scientific discovery and studies in behavioural sciences we are expanding our awareness and reducing our anthropocentric arrogance. Thus we are coming more and more to the realisation of our tenuous place in a total ecosystem (Henderson, 1978, p. 307). Henderson continues in this vein, and what she says is true as far as it goes. But she is perhaps somewhat expansive and optimistic in the extrapolation of her conclusions. Although a small group of environmentalists, conservationists and other enlightened elites may ascertain quite rightly the imminent destruction of the planet by the direct and indirect actions of industrial civilisation, those who realistically hold power in this system are obviously not convinced. Nor are the rest of us. If a significant proportion of the scientific, financial or business communities, let alone the world's populations were to seriously reject industrialisation as the panacea of today's problems and the source of tomorrow's abundance, the human reassessment Henderson is describing

would be a familiar topic. It is not. Her critique seems to be centred on information. The average person is beginning to see the industrial contradiction we are faced with, she maintains. Consequently, when we reach a certain level of environmental and social awareness we will curb our ideas of scientific and technical progress, a sort of intellectual critical mass. We will then direct these fields to fill human needs through application of science and technology at a level appropriate to local concerns and needs.

Although Henderson believes the present system and high rate of industrialisation must be changed, she believes it is being changed. This is only the case in isolated incidents, one may argue. Can the awareness occur faster than what other observers might describe as a rush to environmental and social destruction? It is difficult to share Henderson's optimism because she does not discuss modern consciousness and how it can be shaken out of the scientific saturation with which it is so conditioned. Without addressing this crucial issue which determines Western epistemology itself, the question of providing more information is not as promising a tactic of changing our view of the world, the primary step in affecting the future technology but not the future consciousness.

E. F. Schumacher's *Small is Beautiful* gives basically the same message. He not only addresses environmental and resource concerns but he also reminds the reader of the dehumanisation of work which frequently accompanies technological advancement. What becomes lost is the creative work of skilled hands and minds. Modern production

processes eliminate long-acquired skills and innovative worker input. Fragmented, boring, tedious work predominates in modern industry. Thus Schumacher argues for "technology with a human face". More specifically, and in relation to Third World development, he proposes a greater focus on what he terms intermediate technology. This refers to a level of mechanisation which may be based on very modern, sophisticated knowledge, but it is applied in a manner which accounts for local requirements. It tends to be more labour than capital intensive and makes careful use of local natural resources (Schumacher, 1974, p. 124-133).

Like Henderson, Schumacher also understands that a different point of view is required in order to alter current goals of modernity. The strength necessary to affect the degree of change he prescribes can only come from "deep convictions", he states. He gives this religious associations and refers to those who have this quality as "home comers". As with Henderson, he assumes a radical change in consciousness is possible without further elaboration. Information is the key. Just tell people. Explain the problems to them. However, perhaps those who sustain the status quo also have "deep convictions". An ardent belief in the virtues of science and technology has been a factor of the Western world view since the Enlightenment. This conditions our reception and interpretation of information. Consequently, we are more likely to find new information which contradicts our deeply held beliefs to be incorrect or suspiciously subversive, than we are a legitimate challenge. If one advocates the rejection of this concept, more than wishful assertion is required. Through what mechanism is the mind set of a

significant element of the world power structure (including Third World elites) to be completely reversed? Neither Henderson nor Schumacher, nor the appropriate technology thesis in general¹⁰ offer a workable solution to the urgent problems presented by industrialisation. While their criticisms and suggestions are for the most part valid and applicable, these do not significantly alter the existing and intended direction of industry on a global scale.

¹ For example see Streeton (1967), and Chinchilla and Dietz (1981).

² See Love, (1980) for a discussion of Prebisch's theories.

³ See also Furtado, (1976, p, 120ff) regarding reinforcement and creation of structural imbalances.

⁴ Celso Furtado provides a more developed economic critique of import substitution in his *Economic Development of Latin America*. To relieve the structural imbalances which result, he promotes national, regional and international planning of economies. It is interesting that although he still believes industrialisation is the key and that autonomous control of technology is possible he also writes that technological progress is also important in order to combat soil erosion and stop destruction of other non-renewable resources (p. 302).

⁵ This statement may be described as ideological. From a Marxist point of view capitalist production is in fact alienated social relations. Consequently, industry may be described as social in nature.

⁶ The obvious question here is where does the optimism come from? Eastern Europe is highly industrialised and these countries have not proven to be open, egalitarian societies and Second World states are very far from withering away. However, this is a major question and cannot be elaborated here.

⁷ See Chilcote (1981 and 1984), Limqueco and McFarlane (1983), and Laclau (1977, Chapter 1).

⁸ F.H. Cardoso adds that it is also a structural fallacy that the marginalised rural and urban masses will be incorporated into the general market ("population and market are not synonymous".) Capitalist development in the Third World allows high concentration of income within the hands of a small but disproportionately affluent middle and upper class. Thus pockets of business development may occur within a country without significant general industrial change occurring (Cardoso, 1972, p. 86-88)

⁹ It is worth noting that Celso Furtado, well known as an "ECLA School" economist who has written extensively and articulately on the poor prospects for development and industrialisation in the periphery, has also written a very thoughtful contribution regarding the "logic of civilisation" (1983). More philosophical than the usual economy-fixated development theory, Furtado suggests there are other things we could have done with science and technology that may not have resulted in the distortions of development and underdevelopment we are now experiencing. Referring to Habermas and Marcuse he, like Sutcliffe, draws attention to the distinction between the theoretical promise of industrialisation and its actual accomplishments.

¹⁰ The appropriate technology thesis is itself under much criticism. Arghiri Emmanuel (1982) attacks it as a ruse to flog inferior equipment to the Third World, as well as perpetuate poverty and underdevelopment. Witold Rybczynski (1980, 1983) questions the cliches of appropriate technology: who decides what is appropriate and small? How does one prevent it from becoming big? How is it possible to dismantle one element of a total system? Emmanuel and Rybczynski arrive at different conclusions, however. The former argues for more and bigger technology/industry in the Third World. The latter suggests that global downscaling is necessary.

CHAPTER TWO

THEORIES OF MYTH

Throughout our discussion of theories of industrialisation, a certain tenacious commitment by modernisers suggests a consistent, overarching belief structure may be at work. Notions such as progress and evolution, as well as trust in the fulfilment of implicit promises intimated by industrial development recur in the writings of conservative, liberal-reformist, and radical theorists. Before we consider whether this may be indicative of a mythological component to industrialisation, let us address the nature and dynamic of myth.

It will be the purpose of the present chapter to introduce theories of myth as they are relevant for the arguments being made here. This will establish an analytical framework useful in Chapter Three for an inquiry into industrialisation as a concept. Consequently, focus will be on the cultural function of myth. The work of Claude Levi-Strauss, and other authors concerned with myth in Western, as well as traditional societies, will be referenced in support of two central arguments. The first establishes myth as historical memory aggregated through selective remembering. The other will consider myth as a communication system transferring cultural messages from generation to generation.

Criticism of Levi-Strauss's work by Mary Douglas, K.O.L. Burridge and Edmund Leach will help clarify the issues. Richard Slotkin is an American who has written a detailed, extensive study of the age of industrialisation in the United States. Using myth as a tool for understanding that period, his observations on the role of myth and his application of it to this modern topic will also be useful. Although he follows Levi-Strauss to some extent, he is more directly concerned with the ideological aspects of mythology. C. R. Badcock helps draw connections between myth, *bricolage*, and linguistics. Finally, modern semiotics, through the important essay "Myth Today" by Roland Barthes will be discussed. This will be useful in understanding that there are layers of meaning possible in interpretation of events, images and texts, and that the most obvious one is not always the most significant. It will also be helpful in perceiving the mystification process of myth and understanding the extensive, all-permeating nature of mythology.

Most of these writers can be considered structural or post-structural Marxists. Indeed, Levi-Strauss and Barthes are key figures. While this is not the place to debate structural Marxism, some caveats should be observed. The world is not an arbitrary place; clearly any social or political theory must account for the systematic character of culture. It is not necessary, however, to kill off the subject in this process. Consequently, while this thesis focusses on the shaping of the industrial consciousness, it does not suggest all human agency is eliminated. Environmentalists, project workers, and appropriate technology supporters are clear illustrations that we are not mindless pawns in a

game of terminal chess. Furthermore, it is not the intention here to insinuate that our inability to imagine human existence without the drive to world industrialisation is the only factor in its continuance. The profit motive, for instance, is obviously a central factor.

While a structural method is useful, the Marxist component is also important. Although, as we saw in Chapter One, industrialisation is an essential element in Marx's political thought, other Marxian analyses are also relevant. The inherent expansionism of capitalism, its exploitative nature, its promotion of private property, and its emphasis on extreme individualism are examples. Most directly for the purposes here, however, is the concept of alienation. In this, the subject and object are separated through the division of labour. The individual is alienated from her or his product in large scale production formats. Marx writes in "The Economic and Philosophical Manuscripts":

The object that labour produces, its product, confronts it as an alien being, as a power independent of the producer. The product of labour is labour that has solidified itself into an object. The appropriation of the object appears as alienation to such an extent that the more objects the worker produces, the less he can possess and the more he falls under the domination of his product, capital. (Marx, 1977, p. 78)

Modern industrialisation is the extreme manifestation of this. That one's labour becomes reified in an object hostile to the producer is a central point being argued here. Events such as the Chernobyl nuclear accident or

Bhopal chemical disaster are only the most extreme. Our alienation is also evident in constant environmental degradation which is the bi-product of 200 years of industrialisation, and in culturally and socially insensitive development theories designed for the Third World.

Unlike theories of industrialisation, theories of myth are usually identified as such. There is, of course, much written on Classical mythology, but this is primarily descriptive and will not concern us here. The field of anthropology offers more in the way of analytical theories of myth. As one writer suggests, "the history of anthropology is studded with formulations as to the purpose of myth" (Burridge, 1967, p. 112). Even so, the work of Claude Levi-Strauss remains an important landmark of theory and methodology in this area.

Levi-Strauss identifies myth as having two functions. Mythology, he states, is a form of historical memory developed by cultures that have no written forms with which to preserve their history (Levi-Strauss, 1979, p. 42-43). Thus mythology is a vehicle for maintaining the memory of actual past events. This could include heroic events, migrations, major ceremonies, etc. Many societies have relied on the repetition of myth to carry forward cultural memory. The telling of the myth is an activity which takes on the characteristic of an event repeated periodically through history. One example Levi-Strauss uses is the incest taboo. Each succeeding generation absorbs this as a legitimate prohibition sanctioned by the community. Consequently, tradition is reinforced and perpetuated at the same time the history of the taboo is carried forward (Levi-Strauss, 1976, p. 19-33). This form of history is not confined,

however, by fixed circumstances and events. The same elements combine again and again, although they may come together differently (Levi-Strauss, 1979, p. 40). Although we may feel the modern mind is beyond this loose accounting of events, given the precision of our "scientific" approach to history, Levi-Strauss reminds us that we can read many different variations of our own history. Even when contradictory, however, they share a certain body of elements. Thus from Levi-Strauss's point of view we may simply be exercising our own mythology (Levi-Strauss, 1979, p. 41). This complicated approach to understanding the role of myth is not to be taken too seriously in isolation, although the historical aspect is certainly important. As Richard Slotkin succinctly states "Myth is history successfully disguised as archetype" (Slotkin, 1985, p. 20). The notion of history is more usefully viewed in conjunction with the other purposes of myth.

The second function of myth identified by Levi-Strauss is as symbol or code (Levi-Strauss, 1979, p. 9). In this way myth is also the promulgator of consistent cultural messages. He is bridging the gap between these two views of myth when he applies a structuralist methodology and looks for the meaning of shared elements among myths.¹ The idea of mythology as a history lesson of actual events is difficult to support or use for analytical purposes. Consequently, it is the symbolic aspect of myth that others have focussed on most fruitfully. Furthermore, history and symbol are not necessarily mutually exclusive. As with Levi-Strauss's example of exogamy², the symbols themselves bring forward at least some reference to real events past, such as the historical habit of not marrying a member of one's own kinship group.

Important for Levi-Strauss was the repetition of elements across myths. For him the patterns thereby revealed indicated the symbolic elements of mythology. In *Structure and Anthropology* he criticises R. Radcliffe-Brown (Levi-Strauss, 1976, p. 17) for expecting to ascertain the underlying realities of myth through surface, empirical observation. The role of Anthropology he saw, instead, as

A taxonomy whose purpose is to identify and to classify types, to analyse their constituent parts and to establish correlations between them.

Further, he adds,

For anthropology, which is a conversation of man with man, all things are symbol and sign which act as intermediaries between two subjects. (Levi-Strauss, 1976, p. 12, 11)

This process of categorizing and explaining myths would seem to be a straight-forward, objective activity. Words such as "taxonomy", "identify", "classify", "analyze" project an atmosphere of pristine scientific sureness. It also leads the reader to expect that establishing "correlations" between elements will be just one more routine activity. Furthermore, a huge extrapolation has been made between the first and second quotations. So universal are the components of myth that disparate cultures and historical epochs can communicate in a non-spatial, non-temporal plane where specifics are fused to the human continuum. Much more is implied here than "conversation" would indicate. This leap goes beyond language to the unification of human

consciousness. And, as one could argue that language is essentially cultural, it appears what Levi-Strauss is describing here is something innate in the human mind. The Oedipal theory and incest prohibition are examples he uses to illustrate his point (Levi-Strauss, 1976, p. 19-23).

This penchant for extrapolation from cultural and historical specifics to the universal is a highly criticised area of his work. K.O.L. Burridge describes Levi-Strauss's reductionism of myth as self-explanatory and self-justifying (Burridge, 1967, p. 64). Through the criticism, however, and in spite of Levi-Strauss's ambitious interpretations and universalities, an influential element addressed by subsequent anthropologists and acknowledged by thoughtful critics is his application of structuralism to communications theory. This aspect of his work which comes directly from his research on myth is of importance here for two reasons in particular: one is the idea of a collection of myths; and the other is the cybernetic implications of myth.

The idea of universality, however, was also the central component in modernisation development. As was indicated in Chapter One, post war America saw the rise of a school of theory which extrapolated American economic, political, cultural and ideological ideas to the rest of the world. We shall return to this idea of universalism when we discuss the dynamic of modern myth.

An essential part of Levi-Strauss's approach to myth as communication system is the distinction he makes between an individual narrative, and a family of myths which are banded together by shared

structures. It is an individual myth's relation to the others within a particular grouping of myths which determines meaning in the individual story. The coherent whole gives the parts their significance (Levi-Strauss, 1979, p. 34-35). He compares myth to music. "It is only by treating the myth as if it were an orchestral score, written stave after stave, that we can understand it as a totality, that we can extract the meaning out of the myth" (Levi-Strauss, 1979, p. 45). Thus the auditor is listening for patterns, repetitions of familiar elements combined in new ways but always relative to a common framework. The emphasis here is on order and structure but also on the power of constants. Like any other communication system, a collection of myths is not an association of monads but an articulated, aggregated whole.

Following this analysis, one may suggest that the individual myth carries a cultural message readable by members of a society with the relevant "corpus of mythology". This last phrase is Edmund Leach's. Like many others (Burridge, Douglas, for example), Leach accepts the notion of myth as communication system but balks at Levi-Strauss's grand extrapolations. Leach points out that the level of the "corpus" or the interpretative mythological structure for Levi-Strauss is global (Leach, 1974, p. 61-63). For the critics, however, the overarching structure is socially and historically specific. These points of Levi-Strauss's work regarding the relationship of history to myth, and the relationship of the individual myth to the collection will prove useful in Chapter Three for understanding the relationship between positivism and industrialism.

Of equal importance for discussions to follow is the concept of myth as cybernetic system. Mary Douglas suggests that Levi-Strauss places sociology (and one assumes anthropology) "Within a single grand discipline of communication. This part of his teaching draws very broadly on the structural analysis of linguistics, and on cybernetics and communication theory in general..." (Douglas, 1967, p. 49). Expressed in this way, the connections between myth as symbol, structure as content, and cultural message as historical memory begin to make more sense. Through these connections the study of social systems is in fact the study of language systems. Each myth is a unit which encodes a message. Like a unit of vocabulary it is in fact a symbol. It is not possible to know what the unit symbolises or to interpret the message except in relation to a total narrative. Thus a "corpus" of mythology functions as that organising principle which provides individual myths (as units of message-encoded vocabulary) with their relevance in the world, their meaning.

These messages are cultural in nature. They represent the habits, taboos, traditions and values of a social community. Thus myth as vocabulary is at once cultural messenger and historical memory if we include the generational re-affirmation of social identity as historical event. And there is every reason to do so, especially as cultural cohesion and cultural codes are often tied to public ritual, ceremony and event. This includes a wide range of activities. Puberty rites, funerals and religious celebrations are only the more obvious, but events more common to our own experience such as elections also serve this function. They are surrounded by much ritual and public attention. Their cultural

message is perhaps more significant than the mere exercise of voting. Elections are a ritual by which we affirm our political, economic and value systems. This is a symbolic message to the world that we are a people which believes in democracy, freedom and equality. The symbolic content of this ritual becomes all the more significant when we closely examine the myth and find very quickly that these values may often be more ideological than actual. In this way, however, an election, an actual historical event functions as both cultural message and historical memory.

This connection between myth and language is one Levi-Strauss makes himself. He applies the structural analysis to myth, connecting it to linguistics via Ferdinand de Saussure. In the years before World War I, de Saussure, the father of modern linguistics, had initiated a fundamentally new approach to language. He studied language as a coherent structure rather than an aggregate of thoughts. Thus he focussed on the system rather than the word (Poster, 1975, p. 307-8).

Levi-Strauss argues that the linguist looked only for surface pattern and did not understand language in terms of its deep unconscious structures, unlike Levi-Strauss for whom the units and the pattern are only meaningful within a unifying corpus. With this he is insisting that language is cultural in essence. It is more than a convention of formal patterns. Content cannot be separated from form. Language may be highly structured and regulated but it is primarily human. Levi-Strauss actually describes anthropology as one of the "semiological sciences" (Levi-Strauss, 1976, p. 16-18). To repeat a quotation, "For anthropology,

which is a conversation of man with man, all things are symbol and sign which act as intermediaries between two subjects" (Levi-Strauss, 1976, p. 11).

Richard Slotkin also addresses the aspects of history and language in his discussion of myth. He describes myths as stories which have their roots in real historical occurrences. Over generations they become abstracted and standardized both in style and structure "until they are reduced to a set of powerfully evocative and resonant 'icons'". Thus historical memory is maintained through the constant repetition of narrative; moreover, they have been infused with a symbolic function integrally tied to the needs of their society (Slotkin, 1985, p. 16). In this process the original story loses its localised relevance; the specifics of time and place are no longer remembered, nor do they matter. As myth, the narrative is now encoded with a transhistorical cultural message. In this way seemingly unrelated, contemporary events are connected to events in the past and both re-exercise a cultural norm or value.

To use one of Slotkin's examples, Custer's Last Stand evokes the same "cultural resonance" as Pearl Harbour. They both refer to the "icon" of the heroic American fighting valiantly against all odds, even though both were defeats. Each new telling of the myth "implies a metaphoric connection between the storied past and the present" (Slotkin, 1985, p. 16). The violence to reality that myth construction can involve is well illustrated by Slotkin's example. The history of the United States is remembered by Americans as the stoic struggle of a few courageous pilgrims and their descendants against a hostile frontier composed of

scalp-hungry savages and vast, obstructive geography. It is not remembered as a genocidal orgy of capitalist expansion; an interpretation simplistically crude but at least as defensible as the romantic illusion of Buffalo Bill and the Wild West.

Slotkin, like Levi-Strauss, Leach and Douglas also refers to myth as language system. In the end myths become part of the language, as a deeply encoded set of metaphors that may contain all of the "lessons" we have learned from our history, and all of the essential elements of our world view. (Slotkin, 1985, p. 16).

The phrases "part of language" and "set of metaphors" remind one of what Edmund Leach called "the corpus", and reinforces the idea that individual myths are encoded cultural vehicles which take their meaning from, and are situated within, a single organising principle. "Encoded" and "metaphors" remind us that myths are so much more meaningful than is superficially evident. Their didactic function is found in "lessons" which Slotkin describes as covering every aspect of the way we see the world. This is Levi-Strauss's "conversation of man with man", Douglas's "cybernetic system" and Leach's "corpus" all combined. Slotkin applies his analysis of myth very astutely to the image of the American frontier and its relevance to the early period of industrialisation in that country.

Slotkin's work and the idea of using the concept of myth as a tool of analysis will be elaborated on in Chapter Four where the question of its application to industrialisation itself will be examined. The totality of mythology from this point of view goes beyond a framework for

interpretation. Slotkin states that myth rationalises a particular ideology. It is used to promote a certain set of values, power relations and authority structure. One may also argue that this closed system appears to be the source of legitimate knowledge itself. Thus the "corpus" is nothing short of epistemological in function and nature. Although Slotkin does not discuss this directly, he does reinforce such an interpretation when he states, "Myth is invoked as a means of deriving usable values from history, and of putting those values beyond the reach of critical demystification" (Slotkin, 1985, p. 19). Thus culturally specific values are seen as universal truths. Because knowledge is disembodied from any obvious human source, it takes on a mystical, idealised existence, beyond critical evaluation, beyond ideological association, and beyond historical specificity. In this process myth structures reality. It presents as natural law and inevitable evolution, something which is really a human construction assembled through choice. Slotkin adds "the moral and political imperatives implicit in the myths are given as if they were the only possible choices for moral and intelligent beings..."(Slotkin, 1985, p. 19). Thus the corpus of myth does condition our total world view. It is reinforced and historically maintained through the evocation of emotional, ritual, ceremonial metaphors, or as Slotkin succinctly phrases it, "Myth does not argue its ideology, it exemplifies it" (Slotkin, 1985, p. 19). Consequently, reason, evaluation, and criticism are by-passed.

Stephen Ausband discusses at length the security aspect of myth. He sees myth as so integral to the image of a cohesive society that when faith begins to crumble, so does social stability. "Collapse of a

mythology threatens to turn coherency into chaos...We reach for order through myth" (Ausband, 1983, p. 20-21). Although his application of this analysis deals with the emergence of particular literary movements and individual works of literature, the notion of mythic structure as locus of social security is essential to the image of myth being argued here. It affirms the central place of myth in our collective and individual psyche. The epistemological and ideological functions of myth discussed above are sources of that security. The comforting sureness these factors provide by insisting that there is Absolute Truth and that it is knowable, indeed, that we already know it, infuses life with predictability and hence security. This smug satisfaction and uncritical attitude will be returned to in Chapter Three where the seamless image of scientific and technical progress will be examined.

Throughout the discussion of myth synthesized here, it has been clear that even those who criticise Levi-Strauss's work for its weaknesses usually give general support to his concept of myth as language. The "corpus" of myth is a culturally coherent whole, like a language, composed of deeply encoded symbols (vocabulary) which take interpretation from their relation to the corpus and which are the vehicles of social norms and values. Of those who address the issue of myth as language C.R. Badcock is perhaps one of the most articulate, illustrating the line from *bricolage* to linguistics and Ferdinand de Saussure (pre World War I) to semiotics (post World War II).

Simply stated *bricolage* is the practise of using an object for a purpose it was never intended: a penny becomes a screw driver, a bobby

pin is used as a key, a diaper pin through the cheek functions as a gesture of defiance. Originally the *bricoleur* was a French handyman who could fix anything by being innovative and creative in his approach to repair. His speciality was makeshift repair using an object for a purpose it was not originally intended. In the early sixties Levi-Strauss used the principle behind the activity of the *bricoleur* to explain totemism. Thus through the spirit of *bricolage* animal species were used by some indigenous peoples to identify social classification in the community. A clan did not just use an animal totem as a symbol, but were symbiotic with the creature conceptually. In this way objects become "signs"; "It is something which represents a concept, or an idea, but is not in itself a concept or an idea". The myths involving these animals operate in the way we have been discussing. "The function of the quasi linguistic system of totemism is that of representing both to the native himself and to outsiders the structure of his own society and the nature of his own social identity." (both quotes Badcock, 1975, p. 45-47). The totems and the myths about different species form part of a cultural discourse. The meaning of events and myths, as well as individual human identity is comprehensible through the inner logic of the language system, that is, the corpus.

The transformation of elements into "signs" via the concept of *bricolage* was adopted by Levi-Strauss from the work of structural linguist Ferdinand de Saussure. Saussure divided the linguistic sign into a two-part symbol: the "signifier" and the "signified". The signifier is the object, item, or image which functions as the vehicle for content. The signified is the encoded message, the content. Together they

compose the "sign". The relationship between signifier and the signified is random (Badcock, 1975, p. 46). Anything can be a signifier. Thus semiology is a linguistic *bricolage* where words and images can be encoded (signified) with meaning unrelated to the original use/meaning of the signifier.

Semiology can be used as a tool of analysis in decoding the myths of every day life in the modern world. Building on the work of Saussure, Roland Barthes in the late fifties applied this linguistic convention to the study of common events, images, and objects. In discussing the process of signification Barthes emphasises the integrity of the sign. It is only for analytical purposes that we separate the signified from the signifier. This is an artificial exercise and should not be confused with the synthetic unity of the sign. Deconstruction of the sign into its component parts allows us to decode and demystify it by revealing its ideological underpinnings. However, on the level of experience we perceive the sign as an integrated totality, something which simply exists--a thing, an object, a text (Barthes, 1972, p. 113).

As shall be further discussed in Chapter Four, the function and meaning of myth in everyday life, presumes that an object or image (what modern semiologists call "the text") can have multiple meanings or meanings unrelated to their surface appearance. The "text" is "read"; that is, the sign is decoded through the analytical exercise described above where the signifier (the object/image/word) is separated from the signified (the message). To use one of Barthes' examples, a black pebble can be used as a signifier; it can be loaded with any meaning. But used as

a ballot in an anonymous vote for a death sentence, the black pebble becomes a sign signifying death (Barthes, 1972, p. 113). Thus when we encounter objects, words, images, sounds, etc., in our culture, we must be aware that as signifiers these things may harbour meanings of which we are not always conscious. In this way, we personally receive and integrate messages without being cognizant of the process. It can be argued by implication that responses, tastes, sympathies, etc. can to some degree be shaped. One may also suggest that because this process is unconscious, it is difficult to guard against ideological manipulations or even be sure that one has a complete understanding or is making an accurate interpretation.

The problematic nature of interpretation is further illustrated when Barthes applies semiological analysis to myth. Myth, he writes, belongs to a "second order semiological system". This means one set of objects, words or events can have two different interpretations at the same time. The "first order" interpretation refers to the obvious and immediate meaning of the situation/object to be interpreted (the "text" to be "read"). Barthes example refers to a magazine image of a uniformed man of dark skin looking upward and saluting. A first order interpretation combining the signifier (the visual picture), and the signified (the encoded message), would simply be, a black man is saluting the French flag. This simple reading is the final point in a first order semiological system. In a second order semiological system (to which myth belongs), this basic cognition itself becomes the signifier. Although one can still recognize the event is occurring, this simple description is no longer the meaning. This will be determined by the signified, that is, the re-loading

of content. In the consequential "second order semiological system" the signified for this example would be, France is a great empire and all members of that empire, regardless of race are treated equally and are all enthusiastically loyal to the colonial centre, France. Associations of French nationalism, military valour, loyalty and the grandeur of empire resonate (Barthes, 1972, p. 111-117). This is the process by which signs made up of first order semiological elements are then used as signifiers for myth.

This is important for the discussion of myth because there are alternative meanings possible here, but they are not made consciously by most viewers of the image. This romantic illusion of the black loyalist is reminiscent of Richard Slotkin's reference to that supposedly heroic occurrence, Custer's Last Stand. Both these are examples of myth, not true objective descriptions of real life events. For a mythic reading of these images to be possible, the historical and political realities must be ignored, denied, or marginalised. The usually brutal and aggressive nature of colonial expansion has been forgotten in both the Barthes and Slotkin myths. Extreme violence has been done to reality in the French example in that through this image France's colonial experience in Africa is intimated to have been an harmonious experience where millions of disparate ethnic peoples have evolved from savagery to loyal assimilation into French culture and modern civilisation. This is not history; it is fraud, or more appropriately for the present argument, it is myth-making. Yet real life elements are used. As Barthes states, myth does not hide anything. It may distort reality, but it does not eliminate it.

This is in effect ideology in the Marxist sense and it connects Barthes again to Slotkin. Barthes writes, "The nature of the mythic signification can in fact be well conveyed by one particular simile; it is neither more nor less arbitrary than an ideograph. Myth is a pure ideographic system...." (Barthes, 1972, p. 127). Thus myth is described as a "graph" (a piece of writing or a drawing) which carries an ideological message. And if it is indeed ideographic, it must have two important qualities. The myth must be represented in some kind of graphic form, be it pictorial or textual, and it (the signifier) must be loaded with an ideological message (the signified). One is again reminded of the language reference of Levi-Strauss and Douglas, as well as the pictorial signifiers such as images of the Wild West examined by Slotkin. "We reach here the very principle of myth: it transforms history into nature" (Barthes, 1972, p. 129). In a sense, those who control myth, control reality, both contemporary and historical. To the average French citizen, the magazine image of the black soldier saluting the flag probably does represent what for them is the true nature of colonialism because this myth is consistent within the corpus from which it comes. A mythology of the great French civilisation can easily accommodate such a romantic myth signified by the magazine picture.

In this way Barthes is not so far from Levi-Strauss's idea of myth as historical memory, real life events that have been selectively abstracted and socially integrated (Barthes refers to the haemorrhaging of reality, p. 143). Through this process myth naturalises history, masking the social function of myth (Barthes, 1972, p. 142). As Barthes writes,

Myth does not deny things, on the contrary, its function is to talk about them. Simply, it purifies them; it makes them innocent, it gives them a natural and eternal justification, it gives them a clarity which is not that of an explanation but that of a statement of fact. (Barthes, 1972, p. 143)

Historical and modern events become de-politicised, drained of conflict, infused with an inner self dynamic. There are no actors in this mythological vision; events occur through inevitable evolution. There is a comforting sense of natural human evolution here. In this way events also become rationalised. Colonialism, it seems, was just the inevitable consequence of certain natural factors: the creative ability of the human mind, an innate drive to maximise personal benefit, and the Northern European commitment to hard work, thrift and sobriety.

Thus, the very tracks of human construction are obscured. The hand is indeed invisible. What remains is a seamless, disembodied and mystified Truth, with no cracks to invite queries or provoke curiosity. In the following chapter the concept (that is, the conception, the abstraction itself) of industrialisation will be examined, combining the descriptive perceptions of industrialisation offered in Chapter One and the analytical framework of myth elaborated in Chapter Two.

¹ It was Levi-Strauss who transferred to anthropology a structural approach which finds its root in linguistics. He felt that by looking at the structural, systemic aspects of

culture, we could eventually achieve scientific precision in our study of human life. In this methodology rational thought and systems analysis takes primacy over empirical data collecting. See Poster (1975), Chapter 8, and Badcock's book (1975) generally. Also see Craib (1984), Part III for an introduction to structuralism.

² For example, see *Structural Anthropology*, passim.

CHAPTER THREE

THE MYTH OF INDUSTRIALISATION

The purpose of the next two chapters is to reconsider industrialization in relation to the concept of myth as discussed in Chapter Two, specifically the function of myth as legitimiser and promulgator of social norms and beliefs. By looking at industrialisation within the context of myth it may be possible to get a new perspective on why we are unable to hear serious criticism of industrialisation as the motor of human advancement. As we have seen, myth is concerned with the most fundamental cultural beliefs. All understanding of the world takes place in relation to these cultural building blocks. Consequently, they are crucial operants in the structuring of consciousness.

As discussed in Chapter Two a distinction can be made between individual myths and the overarching framework to which they all belong and relative to which each finds its interpretation. This is what Edmund Leach terms the "corpus". The corpus will be defined as Modernity.¹ In *Key Words: A Vocabulary of Culture and Society* Raymond Williams discusses the evolution of the word "modern". Two shifts in its meaning are noteworthy. *Modo*, the Latin root translates as just now. Williams equates this with contemporary in his description of how the word was used for centuries. Thus the original function of the term was to objectively denote a temporal relationship, in much the same way

historians still refer to the modern period when they simply intend to indicate time since the Middle Ages. Value and cultural associations are minimised in this usage. Sometime during the 17th and 18th centuries the term modernity (along with modernism and modernist) came into use. The concept also took on negative connotations until the 19th century when it then became synonymous with improved (Williams, 1976, p. 174). Since that time modernness has generally been considered not only a positive trait but a qualitative advancement over previous conditions.

Another shift in the meaning of modern is embodied in this idea of advancement. Whereas the original Latin meaning of "just now" indicated essentially a static quality, the post-Enlightenment usage of the term has come to imply a forward dynamic. These changes in the meaning of Modern are important because they lie at the heart of the Myth of Industrialisation.

Modernity includes a large number of interrelated components. Consequently, a few essential elements will be identified as signifying Modernity. These act as building blocks from which a large number of more complicated notions emerge. In part, it is connected to our perceptions of human nature and concerns issues such as atomism, autonomy and choice. Modernity also helps shape our view of the nature of the universe, involving ideas such as evolutionism and progress. These properties are consistent, regardless of subject, be it nature of the political state, literature, economics, social thought or architecture.

Atomism is defined for the moment as the belief that the universe ultimately is composed of irreducible particles. This is usually expressed in the argument that all matter is composed of atoms. Our purposes are more general here, however, and the concept of atomism cannot be limited to matter. Atomism is manifested in many forms: as the monad in Gottfried Leibniz's philosophy, as the individual in social theory, as the creative genius in cultural theory to suggest only a few examples. However, the essential property of atomism is the concept of singularity.

Reason is another fundamental feature of modernity. In spite of the philosophical debate between the rationalists and the empiricists, "reason" or "the rational" here will refer to the belief that true knowledge (as opposed to opinion, perception or interpretation) can be acquired through application of human thought. Given enough time all things are knowable and explainable. Thus our faith in reason is unquestioned and boundless.

In his discussion of the term and its semantic family Raymond Williams makes a distinction between reasoning, a human faculty which provides evidence for belief, and rationalizing, an activity not necessarily related to reason at all (Williams, 1976, p. 211). The significance of this will become clearer when we examine reason as applied to industrialisation. Another important aspect of reason is its controlling nature. We use it as a tool to manipulate nature for our own gain. Reason has also been used historically to construct a convenient hierarchy in order to rationalise domination of traditional peoples.

Atomism and reason are connected to autonomy and choice, two secondary aspects of modernity as it relates to human nature. Autonomy, from the Greek *autos* (self) and *nomos* (law) emphasises intellectual control over animal appetite and passion. Thus, autonomous choice depends on the isolated individual and his or her ability to astutely analyse available data to achieve a pragmatic, effective decision. Likewise, choice is an important component in the mythology corpus of Modernity and also reflects the subjective, secular nature of modern life.

Other relevant aspects of modernity concern the nature of the universe. The two essential concepts here are evolution and progress. Williams notes that although the Latin root of evolution is *evolvere*, to unroll, it soon became applied to the world of ideas and by at least the 17th century it had achieved broad application. In biology it referred to the development from immature to mature organic forms, but from the late 18th century this sense had been extrapolated to mean an inherent and inevitable natural design. By the 19th century, the terms of reference became quite extensive including social and political organization, as well as other non-biological areas (Williams, 1976, p. 103-05).

As Williams notes, progress is a term linked to ideas of civilisation and improvement. It too has taken on, since the Industrial Revolution, a quality of inevitability. He describes it as a "law of history, 'you can't stop progress'" (Williams, 1976, p. 206). Unlike evolution the term lacks the sense of unfolding toward a fully developed

maturity. Progress is a constant part of the natural order of things. Also unlike evolution, it is a good, to be imitated, encouraged, copied, sought, achieved and exhibited. The shift from an agricultural-based economy to an industrial base, migration of rural peasants to urban centres, and the shift in focus from a local to an international realm are examples of progress. The idea of progress as Westernisation is described and promoted very clearly by American post war modernisation theorists such as Rostow, Organski and Apter.

The movement from simple to refined form implies maturation. We identify this as good. Consequently "evolution" has come to be used almost synonymously with "progress". The original distinction, however, is important; not all change is good. If an improved and beneficial end is central to our understanding of the concept "progress", then if constantly advancing science and technological change result in the near destruction of the planet either through nuclear war or environmental irresponsibility, will industrialisation still be considered progress? It may, however, still be described as an evolution.

To summarize, the overarching corpus of mythology within which post-Enlightenment thinking is shaped can be identified as Modernity. Atomism, reason, autonomy, choice, evolution and progress are some of its identifying characteristics. Individually and in combinations these properties are manifested in all aspects of life--economics, politics, social organization, culture.

But Modernity is more than a collection of identifiable properties. It is a belief structure. And as such, it is open to interpretation. Consequently, it may be said that imbedded within Modernity there is a paradox. On the one hand it is considered synonymous with a high quality of life, whether this is defined in terms of production volumes or illusions of moral superiority associated with ethics such as hard work and thrift. This view of modernity which emphasises qualities generally agreed by the West to be positive embody what we may term the utopian side of the paradox. It is from here that the Myth of Industrialisation emerges. Industrialisation as a myth within the corpus also exhibits this paradox. This Myth promises that through the application of modern thinking, modern methods of organization, and modern science, societies can achieve economic prosperity, political democracy, individual freedom and social harmony. The theories of industrialisation, as discussed in Chapter One, fit well within this paradigm, regardless of ideological position.

For example Walt Rostow's five stage theory of economic growth appears to provide a universal description of all economic development, where in fact it is a selective history of Western European economic development. Stage three ("the great watershed") is an orgy of supply and demand. Rural peasants move from their now anachronistic life of subsistence farming to rapidly expanding urban areas where they find full employment and a cornucopia of things to buy. As good as this may sound it gets even better. Stage five, after all, is the "age of high mass consumption". Leading sectors of the economy are aimed at filling the insatiable appetite for consumer goods and services (including social

security) initiated by the large urban industrial work force. Rostow identifies the automobile as significant indicator in this pursuit. Nirvana, we can see, looks very much like middle America circa 1960 (which, importantly, is when Rostow's book was published--thus he has effectively universalised the historically and culturally specific).

Rostow leaves no doubt as to the source of this economic abundance. Traditional societies, he insists, must shift their efforts to an industrial base if they are to achieve these modern goals.² Through his description of a five stage theory Rostow charts the unfolding of an evolutionary programme of human progress. Nowhere does he question the assumption that history will repeat itself. He is not obligated to argue the point, because inevitabilities are outside the realm of argumentation. These assumptions correspond to essential elements in the corpus of Modernity and illustrate their utopian manifestation in the Myth of Industrialisation.

The belief that industry is synonymous with abundance is not seriously challenged by the liberal-reformists.³ While many, as discussed in Chapter One, realize that industrialisation may not bring abundance for all, they feel this is a problem mainly of distribution. Prebisch refers to "the need to take advantage of this progress [science and technology] to improve the lot of the Latin American population." Both the ECLA-associated writers and the Brandt Report are concerned with growth and development as human issues. But reinforcing the premise that industrialisation is the key, they have tried a number of different approaches in order to alleviate the obstructions to progress.

Thus the concept of import substitution, proposals for greater access to patents, and new enticements for multinational corporations are all directed at bringing greater industrial capacity to Third World nations. Even the critique of Singer and Ansari primarily targets the lack of control of the development process by local leaders. They argue for intervention. And although they are concerned with social needs and pollution problems they, like the other liberal reformists, take as their premise the belief that a reformed and moral industrialisation process is the path to future economic prosperity.

As noted by Geoffrey Hunt the obstacles to "progress" are seen in terms of lacks. Although he criticises traditional development theory for this, this atomistic attitude is not limited to any ideological position. It is a habit of mind and a property (individual lacks) of Modernity. Obstructions in industrial evolution are described by their singularity, not by their relationships to anything. Thus if "the problem" is defined as a shortage of entrepreneurs, the solution is to either encourage local people to take on this role or to import foreign capital as a substitute. The web of interlocking issues such as the relationship of people to land, the interdependence of extended family and ethnic units, fear of risk-taking, in countries where survival has traditionally depended upon conservative, cautious habits of mind, and other objective realities are ignored. Rhetoric to the contrary, problems and solutions are atomized, one cause, one effect. This is well illustrated in the World Bank's concern that "excessive government intervention" might hamper "rapid industrial growth." The priorities are set. Unintended consequences of the drive to industrialise, such as irreversible

environmental damage, genocide, major industrial accidents such as Bophal, large scale dislocation, super exploitation, increasing impoverishment, authoritarian dictatorships with their concomitant violence, and the other innumerable costs are all together not enough to even dent our faith in industrialisation as the motor of economic prosperity and future abundance.

Radical theorists are at least as enthusiastic as non-Marxists. As discussed in Chapter One Marx had great respect for "bourgeois industry and commerce". Furthermore, when he refers to England as the "unconscious tool of history" human agency is eliminated. In Marxist theory both the revolution and the timing are tied to industrial development. The proletariat, that specifically urbanized, industrial work force is the agent of further progress once capitalism becomes stalled by its own contradictions. However, as illustrated, for Marx, Lenin, Stalin, and Castro it is the relations of production, not the forces of production, that need changing. Stalin speaks of catching up and Castro complains that the Third World is being kept from economic advancement by the North and that full industrialisation must be achieved in order to experience the economic prosperity which is the precursor to material abundance.

Developmental theorists such as Frank, Amin and Wallerstein try to identify obstacles to industry and prescribe remedies that will put Third World countries on the industrialisation continuum, a staged progression moving (according to Petras) toward a thriving articulated economy. When appropriate technology is aimed at the underdeveloped, many Third

World elites and intellectuals see this as simply a whitewash to obscure attempts by First World people to prevent significant economic development and condemn the poor to a life of hardship and starvation .

Another utopian aspect of the Myth of Industrialisation is its promise of political democracy. Here, the concept of reason, so central to Modernity, finds its expression in the modern state. Concomitant with the industrial revolution and the rise of Capitalism the basis of political authority shifted from authoritarianism based on tradition or the divine right of kings, to a social contract between the state and the citizen. This rested on the belief in an autonomous, reasoning, individual not swayed by sophistry (Gamble 1974, p. 52, 54, 56). Because each adult citizen is capable of rational decision, a higher wisdom is not necessary to control the state. Sovereignty rests with the people. Democracy, however, is also seen by many as subject to an evolutionary momentum. Organski's stages are an example. It is interesting to note that in the early stages of democratic development there is, in fact, a centralisation and consolidation of power in few hands. During these periods economic and political decisions are taken by elites in order to facilitate and promote industrialisation. In Organski's stages three and four there is a correspondence between degree of industrial development and establishment of democratic structures. Once an advanced industrial economy is established, the exploitative nature of society dissolves and a democratic state is achieved.

This is also implied by those in the liberal reformist position. They believe in the ability of capitalism to provide, eventually, but are

unwilling to wait as long as the modernisation theorists. They believe democracy is compatible with the development of industrialisation and that a high level of exploitation is unacceptable and unnecessary. This understanding is the undercurrent of Chapter Three, "Mutual Interests" of the Brandt Report. "We are looking for a world based less on power and status, more on justice and contract; less discretionary, more governed by fair and open rules." (Brandt, 1981, p. 65). The goal of democracy is clearly the spirit here. However, the Brandt Report as a blueprint for achieving this is a programme of political and economic horse trading. If properly cajoled and rewarded, intransigent elements in the North will realise that a less unequal and more just South is in the North's own interest (Brandt, 1981, p. 64,75). But always it is implied by the liberal reformists that if democracy cannot be achieved sooner, it will follow in the long run. In *Common Crisis*, the three year update of the Brandt Commission, there is a quiet but insistent urgency. Political instability is tied to the continued unwillingness of the North to facilitate, or even to stop hampering, the industrial fulfilment of the South. If new expectations are initiated and then frustrated, social and political instability will follow (Brandt, 1983, p. 37). What is being indicated here is that equality and justice (and by association political democracy) are some of those expectations which accompany a modern industrialised economy and that they will be achieved eventually by either peaceful means or through force.

From a Marxist point of view the promise of political democracy necessarily follows industrialisation because the revolution ensures it. Political democracy is initiated at first in the form of the dictatorship

of the proletariat where the majority class takes over after the industrial economy has been fully developed. This dictatorship is seen as democratic because the state is administered in the interests of the mass of working people. The connection between industrialisation and democracy is made very directly by radicals. In the pure communist society, (a highly industrialised, efficient community) classes will be eliminated. Consequently, social alienation, as well as barriers to education and opportunity will disappear. False consciousness will also no longer prevent citizens from achieving their position as equal participants in a fair society. Given this new attitude, and the fact that the means of production will be socially owned, participatory democracy can be established.

This would take the forms of factory councils, rotating managerial positions, neighbourhood committees, citizens' militias etc. This presumes a great deal of decentralisation and citizen control, whether or not there is a central government to deal with larger issues. This is a much more direct form of democracy; indeed, it approaches the essence and spirit of the term in a way voting for one's choice of wealthy white male once every four years does not. While Marx did not articulate the form it would take, he certainly promoted the existence of the just society, with its necessary concomitant of participatory democracy.⁴

Importantly for radicals, political democracy means controlling the distributive apparatus thus ensuring equality in a number of areas such as access to food, shelter, education and opportunity. But all of this is precipitated and enhanced by the full development of industry. Ironically

at this ultimate stage Stalin and Rostow sound very much alike. They both share the same unquestioned belief that industrialisation is the dynamic which assures material abundance, social welfare, and political democracy.

Freedom of the individual is another important utopian aspect of modernity as revealed in the Myth of Industrialisation, although it manifests itself differently under capitalism and socialism. The autonomous, self-maximizing, risk-taking individual is central to the development of industrialisation. This is particularly clear when we read the prescription for development designed by the post war Americans.

The stage theories of both Rostow and Organski require the re-socialisation of Third World peoples to encourage what Rostow terms an "entrepreneurial frame of mind". To facilitate this he calls for centralisation of political power and a flexible social hierarchy. In order to encourage the free dealing, risk-taking capitalist individual, that person must perceive some reward for his or her efforts and stress. The promise of future aggrandisement will suffice; perception is the operative component here. Appearances and promises will motivate if the participant has faith. The reward of upward mobility frequently requires the destruction of old status symbols and static social hierarchies. The existence of social hierarchy is essential. Unlike traditional systems, however, the individuals must feel they are in control of their own movement within that hierarchy and that there is no limit to the potential improvement of their position. This right to

tamper is reinforced by Organski, who also identifies traditional ("stagnant") society and attitudes as obstacles that need "disruption" if a new modern frame of mind is to be established, industrialisation to progress, and the society to evolve.

But perhaps it is David Apter who best describes the free individualism in the Myth of Industrialisation (drawing on the utopian view of the individual within Modernity) when he writes, "To be modern means to see life as alternatives, preferences, and choices." He ties this concept of the individual to notions such as experiment, invention, reason, and control of nature.

Apter views the innovative, constantly adapting choice-maker as being symbiotic with an advanced industrial society; that is, they are dependent upon, and integral to, each other. Here we see a synthesis of the modernist properties of atomism, reason and progress. When Apter says it is not possible to achieve industrialisation without modernisation this is what he is alluding to. A competitive industrial environment is a situation where (at least in image) individuals have to adapt to constantly changing circumstances. They must be fast thinking, abreast of new trends, creative and not averse to risk-taking. These dynamic entrepreneurs shape their own world. They take advantage of the unplanned and manipulable aspects of the system to achieve their personal goals. Thus the capitalist industrial model appears to be the locus of human liberation. Released from the cultural and social straightjacket of traditionalism that the modernisation theorists find so objectionable, each atomised individual is set free to explore his or her

personal potential. Thus modernisation theorists argue vehemently for the destruction of the indigenous consciousness and its apparent rigid control of thoughts and behaviour.

This issue is a difficult one for liberal reformists. Although they insist that some measure of planning and social welfare is required to curb the most exploitative excesses of the market system, they have difficulty synthesising this desire with the need to entice members of the local business class to risk their capital. Although the problem is not usually articulated in these terms, the World Bank Report referred to in Chapter One tries to find a balance, speaking to this ambiguity. Government intervention may be necessary to ensure some measure of protection, the Bank admits. This tampering, however, must not "inhibit the mobilisation of entrepreneurial talent". Here again we see the connection between the free individual and "rapid industrial growth"(World Bank, 1972, p. 27). Underneath this is a freedom versus control antagonism that the liberal reformists must harmonise if both the peasant and the entrepreneur are to be free as promised by the Myth of Industrialisation.

From a radical perspective freedom of the individual has two aspects. In *The German Ideology* Marx directly addresses the issue of the free development of individuals in communist society. He promotes the all-rounded development of individuals because this is the appropriate antidote if we are to free ourselves from the narrow confines of the division of labour. Thus the individual can only be truly free when we see ourselves as part of a social whole (Marx, 1970, p. 117).

The other view of freedom of the individual from a radical perspective centres on distribution. Consequently, that personal freedom to act, so integral to a capitalist view of industrialisation translates into freedom from want and insecurity in a socialist understanding of the Myth. Cold war rhetoric aside, Marxist theory, no matter how badly abused by later writers and practitioners, has always implied that technology is the key, and full industrialisation is the vehicle to liberation of the individual from the poverty and drudgery Marx describes in *Capital*, or "freedom from chance" as he writes elsewhere (Marx, 1970, p.190). This is why Marx and Lenin both emphasise the taking over of capitalist industrial achievements intact at the time of revolution. All the Marxist writers discussed in Chapter One clearly believe that abundance will flow from a highly developed industrial economy and that freedom from want for each citizen will be achieved. When Marx chastises Liebknecht in "Critique of the Gotha Programme" it is in part because of Liebknecht's failure to see the crucial link between distribution and freedom of the individual.

The appropriate technology writers may disagree with the entire political spectrum of writers discussed here regarding the degree of sophistication necessary for human liberation. They do, however, also make at least an implied connection between the proper level of technology and the liberation of the individual to pursue more fulfilling activity than would be possible under traditional systems. Perhaps this optimistic linkage is most succinctly expressed in E. F. Schumacher's phrase "technology with a human face". As elaborated here, freedom of

the individual is, regardless of political perspective, clearly seen as ultimately dependent on technology and industry.

Considering the promises of economic prosperity, political democracy, and freedom of the individual, it is not unexpected that the Myth of Industrialisation would also promise social harmony. This is, of course, more implicit than directly articulated. Regardless of ideological perspective the implied conclusion of industrialisation is an unspecified Nirvana where social goods are abundant and political harmony reigns. Here is where many of the identifying features of modernity come together. The ultimate community is a constellation of reason-charged particles negotiating and manoeuvring among a plethora of choices in balanced harmony.

Rostow comes closest to a clear description of this joyous time in his stage five, "the age of high mass consumption", where both consumer goods and social welfare are plentiful. Organski also equates his final stage with both an advanced state of industrialisation and human material fulfilment. The modernisation theorists admit that a certain degree of exploitation is to be expected in the early phases and that social disruption is to be encouraged. However, these are mere stages on the development continuum and although gratification is to be deferred it most definitely is presumed to materialise at some unspecified point. It is important to remember that modernisation theory, of which Rostow, Organski and Apter are representative, was developed in post-war America. The U.S. had emerged from the war technologically advanced and financially sound. It still maintained a high level of military

production because of the supposed Soviet threat and expanding U.S. interests in the Third World (Korea and South East Asia). At the same time it greatly increased consumer production to take advantage of the now relatively affluent middle class at home and the markets opening in Europe as a consequence of the Marshall Plan. ⁵It appeared then, at least to the middle class, that the Myth of Industrialisation had been realised in all its utopian splendour.

The liberal reformists are again caught in the middle. They believe capitalism contains the potential for human liberation and social harmony. However, unlike the above theorists, the ECLA economists and most members of the Brandt Commission were faced, not with a nascent middle class, but with the extremes of human misery. Consequently, they were less willing to trade off the present for an abstract future. This is a tenuous position, requiring constant negotiation between survival and profit. Even so, the equation is tipped in favour of those who promote progress and industrialisation because according to the Myth ultimately the balance will be rectified and social harmony will rule.

Both modernisation theorists and liberal reformists agree that the eventual perfect society will be capitalist in economy. Labour and capital can reconcile any differences they may have because they share the common aim of high industrial production under which both profit seekers and wage earners will all share sufficiently, if not equally.

Radical visions of social harmony are even more vague. Perhaps this is because the Marxist root of radical theory is more a tool for the economic analysis of capitalism than it is a ground plan for the future workers' paradise. The difference between the liberal reformist position, which attempts to mediate between the needs of owners and workers, and a Marxist position is articulated in Marx's "Critique of the Gotha Programme". In this article he argues that capitalist needs are not compatible with worker liberation. Thus exploitation is not an unfortunate but temporary phase in the evolutionary progression of human development; it is indigenous to the construction of surplus value and hence profit. In this case social harmony is not achievable under capitalism.

Marx did not describe a futuristic utopia. The withering away of the state, however, (whatever this actually means) must presume enough social harmony to eliminate police, armies, and domestic spy services. This is considerable social harmony by anyone's standard. The future society of peace and social security need not be specifically delineated for the goal of social harmony to be implicit. Ironically, it is Stalin who comes closest to describing (if certainly not fulfilling) the promise. He speaks of a common front between workers, peasants, and intellectuals in the moral and political unity of the Soviet Union. Although Marx did not provide specific blueprints for the future society, its harmony can be clearly inferred from such statements as:

In a higher phase of communist society, after the enslaving

subordination of the individual to the division of labour...has vanished; after labour has become not only a means of life but life's prime want...and all the springs of cooperative wealth flow more abundantly ...can...society inscribe on its banners: from each according to his ability, to each according to his needs! (Marx, 1977, p.569)

Described here is a personal harmony of spirit, social harmony of cooperation and an economic harmony of equal distribution. Although there are obvious major differences between this idea of the ideal society and that of the more conservative theorists, it still carries the message of deferred gratification, but a promise nonetheless that stability and abundance will flow from industrialisation

The radical theorists share with capitalist writers the assumption that at some point an ultimate stage is reached when change ceases. Nirvana is static (not to be confused with stagnant). No further improvement is necessary, no deterioration possible. What then of progress and evolution? If, indeed, you "can't stop progress" and evolution does describe an inevitable unfolding of human history, how can there be a final stage? This dilemma is not discussed by stage theorists or historical materialists.

Regardless of ideological perspective, the utopian aspect of the Myth of Industrialisation has a coherence and a consistency. In this chapter we have articulated this implicit utopian vision and its relationship to the properties of Modernity, as the structuring mythology within which the individual Myth of Industrialisation is situated. Consequently, we have examined the qualities of atomism, reason, autonomy, choice,

evolution, and progress and their manifestations within a set of optimistic promises generally classified as economic prosperity, political democracy, freedom of the individual and social harmony. The next chapter will again examine the notion of paradox within the Myth of Industrialisation and pursue more closely the other side of that dualism.

¹ The term modernism is less helpful here because of its overuse in recent years. Its connotation is often of academic and esoteric debates in the Humanities. Issues like the nature of language (such as deconstruction theory in literary criticism), or in art history, whether the return of figuration in painting constitutes a move to post modernism, are examples.

² It is argued by Barnet and Muller (1974) that the multinational corporations actively propagated the image of the world as one big integrated shopping mall in which everyone gains (p. 37, 47).

³ Sutcliffe (October, 1984) for example, is an exception. Here he makes a distinction between industrialisation in theory and "actually existing industrialisation" (p. 123).

⁴ Although these are not true communist societies, the factory committees of Yugoslavia, citizen militias of Cuba and neighbourhood committees of Mozambique are expressions of this idea. The huge collective Mondragon in the Basque Region of Spain would be a better example of the viability of such organisations, although Spain is not communist either. This includes collectivised banking, social services, education, housing, etc., as well as industrial production. Perhaps the best articulation of the democratic Marxist society is by Antonio Gramsci. For example see Gramsci, 1971, p. 26 (education and culture), or Boggs, 1976, chapter 4.

⁵ See Ewen, (1976, p. 191). This book is also useful in understanding the relationship between the development of advertising as an industry and its impact on American culture. Although there are admittedly important connections between the Myth of Industrialisation and the powerful ability of advertising to shape taste and desire, this is too large a topic to be added here. Ewen's book is a good reference on this subject.

CHAPTER FOUR

DECONSTRUCTION OF THE MYTH

The paradox of industrialisation is that while it holds out the promise of a materially and emotionally secure future, it also can be threatening to the environment and human survival. There is much convincing evidence that this potentiality is in fact presenting us with an increasingly urgent problem.¹ In spite of this evidence, the utopian view of industrialisation not only remains unquestioned in any fundamental sense, but it is also promoted unabated throughout the Third World both by Westerners and by local elites. Conservationists and advocates of appropriate technology have been making their insistent critique since the 1960's. Although awareness of environmental problems such as holes in the ozone layer and atmospheric warming is increasing among scientists, politicians and the general public, in most areas such as water and air pollution there is little or none. Nowhere is the understanding and willingness to change on a large scale as advanced as Hazel Henderson contends (see Chapter One).

The paradox of industrialisation thus presents a contradiction. However, this contradiction, which is of potentially cataclysmic proportions, remains unperceived or ignored even by those who hear of it. The average citizen in the West reads or hears constantly of the environmental hazards of industrialisation such as mercury poisoning, lead in the air, chemical dumping, etc. Love Canal (where homes were

built on a chemical dump site), acid rain, and the Chernobyl nuclear accident (with its explosion, fire and contaminated neighbourhood) are only a few of the worst situations. Sweden's historic decision in 1987 to close down all nuclear power plants is an admirable but rare exception to the general unwillingness of populations or their policy makers to address inconvenient environmental issues. This move does not, however, indicate that the Swedes identify the problem as a contradiction between industry and environmental destruction. Their goal is to maintain the existing level of industrial production and international market focus. Consequently, while energy strategy may have changed, modern Swedish consciousness has not.

The question remains, why is this paradox not recognized? Perhaps the very real negative consequences of industrialisation do not seriously trouble most observers because the contradiction appears resolved. The dialectical struggle between the advantages and the hazards has been obscured into fake dissolution. But via what mechanism? Certainly not because industry has eliminated all potential for disaster. It is argued here that through the construction and maintenance of myth an apparent resolution in favour of the utopian side of the paradox has been affected. This has not been a conspiracy but a consequence of the gradual restructuring of consciousness itself in accord with the Enlightenment values of Modernity discussed in Chapter Two. While not a plot, a certain degree of intention did exist. Rostow and Organski illustrate this well when they directly promote the destruction of traditional value and belief systems. But while 300 years of conspiracy are difficult to maintain, 300 years of informal cooperation between communities of

interest are not. Indeed, if history is any guide, to break radically an entrenched social structure and belief system, nothing short of revolution will suffice.

The perpetuation of myth is an integral part of a society's long term survival. The Myth of Industrialisation is a central example. The utopian aspect of the Myth is as tied to the development of capitalism as it is to Enlightenment values. Seriously addressing the social, cultural and environmental impact of industry can be detrimental to performance in the market. Delays, increases in price, redesign, cancellations, etc, are disadvantageous in a competitive marketplace. The attitude that none of these potential problem areas is threatening enough to require public policy seriously inhibiting the entrepreneur has been a crucial belief in Western economic history. The gradual development of myth has been the mechanism through which the apparent resolution of the paradox within industrialisation has been achieved. In order to understand more clearly the operation of this myth, as well as to appreciate the central position it has in our consciousness and its ability to shape interpretations, a deconstruction of the Myth as defined by Chapter Three will be useful.

This reappraisal of the Myth will be approached from three general directions. The first will utilize the notion of myth as a communication system (introduced in Chapter Two), and trace how this practice has functioned to obfuscate the dystopian side of the Myth of Industrialisation. The second section will consider how industrialisation has been integrated into consciousness via what Georges Sorel termed *embourgeoisment* and consequently our own

participation in the construction of meaning, hence myth. Thirdly, we will consider the concept of technological rationality and its power to convince through apparent reason.

The concept of myth as a system of communication will not be at issue here; it has been argued already in Chapter Two that myth does indeed have this transhistorical function. Nor will content of the Myth of Industrialisation be further elaborated, this has been developed in Chapter Three. The question remains then, how did the properties of modernity (atomism, reason, autonomy, choice, evolution and progress) intersect to become the central properties of the utopian Myth of Industrialisation capable of obscuring, even now, latent dystopian aspects of the history of industrialisation. Or, more simply, how did modernity and industry become synonymous?

Although their direct historical impact began in the 19th century, industry and technology have their roots in the Enlightenment and the concomitant scientific revolution of the 18th century. When Auguste Comte developed his Positive Philosophy he constructed a forceful concept of progress and inevitable evolution, the legacy of which is possibly more significant than the original notion. As Franco Ferrarotti observes, "...Science and mysticism coincide and progress is transformed by philosophical conviction into a religious message." (Ferrarotti, 1985, p. 21). Thus, in his zeal to strip away the veil of mystification provided by theology, Comte replaced it with what he perceived as a greater truth. Although he was not the only one at that time who was of this mind, he was perhaps the most programmatic, insistent and articulate in his view.

In his belief that society is on an evolutionary progression, Comte identified three stages of development.

From the study of the development of human intelligence, in all directions, and through all times, the discovery arises of a great fundamental law, to which it is necessarily subject, and which has a solid foundation of proof, both in the facts of our organization and in our historical experience. The law is this:--that...each branch of our knowledge--passes successively through three different theoretical conditions: the Theological, or fictitious; the Metaphysical, or abstract; and the Scientific, or positive...the first is the necessary point of departure of the human understanding, and the third is its fixed and definite state. The second is merely a state of transition. (Comte, 1974, p.25-26)

Here is the force of nature. Such phrases as "fundamental law", and "necessarily subject" transform Comte's personal interpretations of history into universal imperatives. This total enclosure reaches out "in all directions" and "through all times". Comte reinforces his observations with the "solid proof" of "facts" and "experience". In this way he combines the irrefutable twin powers of nature and science to affirm his message that even epistemology is subject to progress and evolution. Thus culture behaves like biological organisms. To prove his point Comte wrote hundreds of pages tracing the evolutionary programmes of mathematics, astronomy, physics, chemistry, biology, and "social physics". "Historical experience" is the key factor here. Throughout this process Comte selects consistent elements in order to construct a transhistorical communication system. Each subject of observation, be it Sclerous Tissue or Relation of Fetishism to Morals functions as a symbol in a language which transmits a comprehensive meaning greater than the sum of its individual components. The message

is twofold: all human natural and social experience is subject to fundamental laws of progress and evolution; and, science is the ultimate legitimate source of knowledge. Movement is from simple to complex, from amorphous to concrete, and from fluid to fixed. It is also, importantly, from primitive to modern. Thus the modern phase of human development is the final perfect stage. Implied is that these changes are not only inevitable, but that they are good, and that they are a continual improvement over previous conditions and ideas. It is also presumed that at this stage change stops. As with American stage theory and Marxist theories, there is no further progress or deterioration once the perfect stage is reached.

Comte leaves no doubt as to the consequences of this evolutionary process. *The Positive Philosophy* ends with this sentence:

By natural co-operation, the positive philosophy will lead us on to a social condition the most conformable to human nature, in which our characteristic qualities will find their most perfect respective confirmation, their completest mutual harmony, and the freest expansion for each and all. (Comte, 1974, p. 838)

The culmination is a synthesis of human capabilities and material conditions. Comte's articulation of the process and description of the utopia produced is a clear example of how a selective use of history facilitates myth building. This is not to say that science and its accomplishments are a carefully constructed illusion. To the contrary, it is the very real historical contribution of science and technology that provides, on a selective basis, the cultural messages of modernity, as

Consistent interpretations repeat across the centuries. They function as symbols in an increasingly familiar language. Thus the messages of science, of progress, of evolution, resonate from positivism to the Myth of Industrialisation. Both assure human fulfillment through the promise of political and individual justice, economic prosperity, and social harmony.

The stage theories of Walt Rostow and A.F.K. Organski reveal the same "set of powerfully evocative and resonant 'icons'" (to repeat Richard Slotkin's phrase) as Auguste Comte's positive philosophy. When Rostow describes the transition from agriculture to industry, communications, trade and services he is charting an evolution. This is a progression from simple to complex, from primitive to modern. And like Comte, it is a transition from undevelopment to development. The stage theories of all three of these men presume a beginning in which an amorphous constellation of natural resources (human and otherwise) awaits shaping. As though no human community and organisation existed before their plans, history as constructed and projected in stage theory begins unfolding as soon as these societies start to exhibit behaviour identified by Western observers as "progress". For Rostow, Organski, and Comte this refers to the integration of scientific thinking and its economic, social, cultural and political consequences.

The repetition of these attitudes and presumptions across the centuries indicates that myth itself does not "evolve". It merely adapts, selects homogenizes and subsumes historical reality into its own.

dystopian side of colonisation, and environmental exigencies, powerful as they may appear to some, are simply outside the parameters of vision. No conspiracy is necessary. Thus, the Myth of Industrialisation, like all language systems, cannot communicate concepts outside the capabilities of its vocabulary.

Consistently, the idea of progress is tied to the idea of evolution. As Ferrarotti writes, "History loses its dramatic character as a human undertaking. It becomes the mere chronicle of the gradualness of the inevitable." (Ferrarotti, 1985, p. 78).² This predictable continuum which moves from chaos to harmony also has a strong moral component. Ferrarotti refers to the "confusion between technical progress and moral progress..." (Ferrarotti, 1985, p. 21). Consequently, in the historical transition from religious to secular based societies, a moral impetus to human behaviour was maintained. Just as in pre-colonial times destitute peasants suffered countless hardships in the belief of their eventual transition to that place of harmony and abundance called heaven, in a secularized world, hard lives are endured by people in the transitional societies described by Rostow and Organski in large part by the hope of personal progress into that secular place of abundance and harmony, modern industrial society.³ Even if, in reality, traditional consciousness is more tenacious, this moral compulsion for personal improvement is certainly the implicit (and frequently explicit) intention of modern theorists with their banners of personal enterprise and achievement.

The message that material and moral (not to mention political and economic) improvement is achievable through modernization and

industrialisation can be integrated into consciousness only by the filtering out of incompatible messages. Significant, irreversible environmental damage, evidence of active underdevelopment in the Third World, widespread starvation, etc., have to be either marginalized, trivialised, denied, ignored, or homogenized into the Myth itself.⁴

In this we can see how the constellation of concepts identified with modernity come together in the Myth of Industrialisation in such a manner that these concepts themselves form a system of communication which transmits the consistent message of progress via industrialisation. Individual autonomy, choice, and reason are implicitly the basis of science itself, with technology by extrapolation a manifestation of those human qualities which make the supreme species. At the same time, the human hand is kept quite invisible by the concept of evolution. Thus these very real connections and contradictions become obfuscated and mystified through the Myth of Industrialisation because it shapes interpretation by controlling the symbols and hence messages within which we understand the world and make plans for

Richard Slotkin, in *The Fatal Environment*, examines the myth of the American frontier to reveal its ideological function in the industrial development of the United States. Slotkin writes that "The Myth of the Frontier is the American version of the larger myth-ideological system...", which he connects to modernisation in the Western nations and the rise of capitalist economies. He continues,

Progress itself was to be asserted as a positive good

against the aristocratic and peasant traditions that emphasise stasis and permanence in productive techniques and social relations.... Progress itself was to be interpreted in economic terms--an increase in wealth, of productive capacity, of levels of consumption from...decade to decade. Individual assertiveness and achievement were to be justified as values in themselves... (Slotkin, 1985, p. 33)

Slotkin is situating the frontier myth within the corpus of modernity when he refers to the "larger myth-ideological system". The important components of progress and evolution are indicated by the transition from want to abundance and from stasis to dynamism through the unravelling of time. The rational, autonomous choice-making individualist acting to maximize his or her personal gain, and the promise of concomitant upward mobility also appear. The frontier myth's expansionist and culturally violent components find their correspondence in the Myth of Industrialisation, as well as in the development theories of Rostow, Organski, and Apter. "Stagnant" (to poach Organski's adjective) societies obstruct good and virtuous (not to mention profitable) human development; they must be eliminated. In much the same vein, Slotkin goes on to discuss the central place of genocide in the myth of the American frontier. He also connects myth to language. Myths, he notes, function as culturally encoded metaphors, a "shorthand of communication" (Slotkin, 1985, p. 16-19). In this way, the properties of modernity and the concomitant promises of industrialisation resonate across the centuries. Through Comte's positive philosophy, the American frontier myth, and the modernisation theories of the post war period, the utopian aspects of modernity and

The selective use of memory and the shaping of interpretation involved in myth construction are further illustrated if we apply a semiological analysis to the Myth of Industrialisation. As noted by Roland Barthes in Chapter Two above, efforts to decode myth semiologically are made difficult because of the simultaneity of meanings. When "reading" myth, the sign from a different, non-mythic "text" now becomes the signifier in this second order semiological system. Thus the deeper meaning can be obscured. Consider the image of an industrialised society. Exactly whose is not important here; as Rostow, Prebisch, Castro and others share the discourse of industrialisation, they also share the images. Scenes of automated manufacturing systems, bustling cities of sky scrapers, high rise apartments, multi-lane freeways, massive hydroelectric dams, as well as speeding aeroplanes, loaded trains, bulging freight trucks, and bottomless supertankers are common images. In other words, this is a picture which illustrates that "a predominance for industry, communications, trade and services", --which Rostow considered crucial

On a simple level, these images are read easily enough. This is a fully modern nation. Automation, diesel trains, and jets signify technological advancement. Dams, freeways, and high electrical output suggest a sophisticated level of infrastructure. Western style buildings, trucks, trains, supertankers, and a busy pace indicate a significant degree of production and trade.

This aggregated image also implies the presence, or more likely the promise, of those benefits which are the consequent pay-offs of a

modern industrialised society. Economic prosperity will bring abundance in consumer goods and services. Political efficiency, some degree of citizen input, and international credibility must surely follow from trade and commerce. Individual freedom is implicit in the private ownership of automobiles, entrepreneurial activity, and single family housing. This scene appears as a well integrated whole, indicating a significant degree of social harmony, one may presume, because most needs are met and distribution is adequate. This is a very positive view of a modern industrialised society and is not an unlikely interpretation. After all, Utopia takes its power from its promise. It does not have to be realized.

However, as with Barthes' example of the black soldier saluting the French flag, it is possible to go beyond this primary reading in order to ascertain what else the image may be telling the viewer. As with *bricolage* and totemism, different levels of meaning co-exist; let us consider a dystopian interpretation of these images. In this alternative understanding, the primary reading itself becomes the signifier. The economic prosperity may, in fact, be very unequal in its distribution. After all, accumulation is a zero-sum game; the affluence of a tiny minority in many countries is achieved at the expense of the majority who maintain mere subsistence. Urbanisation has seen the growth of shanty towns where the unemployed gather in poverty and despair. The realities of colonial history testify insistently to this alternative reading. Politically, a consideration of regimes in countries which tried to follow the Rostow economic programme can frequently be identified as benevolent fiefdoms at best, brutal dictatorships at worst. This is well illustrated by the input of the liberal reformist development

theorists discussed in Chapter One who attempted to curb the worst excesses of human exploitation and political vandalism. Centralisation of control and decision making has been more the norm than the exception.

An alternative reading of the free individual may well ask, how free is an individual who ekes out an existence in the parallel economy selling chewing gum on a street curb or from intermittent labour at starvation wages? How free is the subsistence farmer who have been driven off the land to the alienating and confining atmosphere of Sao Paulo or Calcutta? Even the imagination is not free. Imported Western popular culture shapes desire and the images of possible futures. Imported television programming and films, primarily from the United States, barrage Third World people with Western ideas of what is desirable, good, beautiful, or valuable. Many of the television programmes are sold with the advertising breaks included. Consequently, not only is the American dream promoted, but demand for specific products is also encouraged.⁵ Finally, with a second order semiological analysis it is possible to examine at a deeper level the interpretation of social harmony. Revealed is the social rupturing promoted by Rostow, Organski, and even Marx. Fragmentation of productive and personal life through division of labour, and disruption of extended family units has had devastating effects on communities. Alienation from one's product, family, community, and traditions have all taken their toll. But, perhaps the final alienation is from our environment where two hundred years of industrialisation are having their most significant impact.

Thus the paradox of industrialisation presents itself; we are offered two opposing readings. Why do we privilege the utopian view over the dystopian, even in the face of much colonial and modern evidence to the contrary?

Consciousness, and hence interpretation, is confined by language. In this case the Myth of Industrialisation is that language system. Consequently, we "read" the above aggregate image within the matrix of promises held out by the Myth. Through such participation the individual actively shares in the construction of knowledge. In this sense the formation of myth is the construction of possible worlds. As is illustrated here, by using the concept of myth as a tool of analysis, we can better appreciate the long roots of industrial consciousness, and understand its connection to modernity. Thus by deconstructing the very concept of industrialisation itself, we can begin to understand its power to shape interpretation and to turn ambiguity to its own advantage. Through the long distorting process of selective historical memory consistent values and acceptable meanings are reinforced. The Myth of Industrialisation ensures that readings of new situations conform, so that inconvenient, antagonistic information becomes ignored, marginalised, or absorbed into the Myth. In this way paradoxes such as those revealed by the second order semiological analysis are apparently resolved. For this to be successful, real colonial history and contemporary social, political and environmental factors must be taken out of context. Thus, this apparent resolution of the paradox is itself the dynamic of obfuscation. Alternative readings would require an alternative vocabulary, a different language system. Through this

As we see, a utopian reading of industrial circumstances acts to perpetuate the Myth of Industrialisation. Through structuring of interpretation, possible criticism and opposition are dissolved and subsumed within the Myth itself. Two other points are useful in understanding the actual dynamic of mystification. One is the concept which Georges Sorel termed *embourgeoisment*. The other is the notion of technological rationality. Although this phrase is mostly associated with Herbert Marcuse, its basic idea structure which examines technology as an imperative, is also important to other critical theorists

Georges Sorel, around the turn of the century, was an astute observer of social myth. Connecting myth, utopia, and politics, he harangued socialists for their lack of interest in fostering and using myth as a motivating tool. In *Reflections on Violence* he writes,

People who are living in this world of "myths" are secure from all refutation...

A myth cannot be refuted, since it is, at bottom, identical with the convictions of a group...

...The myths are not descriptions of things, but expressions of a determination to act. (Sorel, 1950, p. 52,50)

Sorel clearly understood the power of myth to shape perceptions and defy reason. No amount of argumentation can separate the faithful from their myth because it is integral to the very identities of those who believe. This results in a strong conviction to act. He uses Christianity

as an example (Sorel, 1950, p. 45), implying that if socialists exhibited that same kind of heart-felt commitment they would not have been so easily swayed by the sophistry of Eduard Bernstein and his revisionist temptations.

Although Sorel identifies the obduracy of myth, he appreciates more the instrumental and conspiratorial aspects, describing myth as a tool of manipulation. We see this when he relates "convictions" to "determination to act". This also indicates that myth has an impact which is a clearly identified, directly political activity. While he acknowledges the considerable effect myth has on the mind, he does not, however, connect myth to his concept of *embourgeoisment*. Consequently, Sorel views myth as flexible and conscious, at least to its "managers". This approach misses the long term cultural impact of myth which is revealed with the help of anthropological and semiological approaches. It also does not situate myth within a larger corpus of meaning. All this is unfortunate because *embourgeoisment* indicates a high level of understanding of the reshaping of the modern worker's consciousness to conform to the exigencies of capitalist economic development, an idea perhaps not fully articulated until Herbert Marcuse's still relevant *One Dimensional Man* of 1964.⁶

Embourgeoisment describes the process in which the working class assimilates the culture of the bourgeoisie. As Larry Portis clarifies, this did not mean that workers actually improved their class position; "...it meant rather that working people were capable of imitating bourgeois behaviour and adopting bourgeois values." (Portis, 1980, p. 89).

One of these central values was the concept of progress. It was noted in Chapter Three that progress is linked to notions of civilisation and improvement. This is not necessarily the obvious way to view human existence. Furthermore, these associations were not part of the original meaning of the term. As Raymond Williams points out, before the 17th century progress simply indicated direction of movement. No moral or ideological implications entered into this definition. It is at the time of the Enlightenment that a change in the meaning of progress to denote movement from bad to good began to occur (Williams, 1976, p. 205). By the 19th Century and the industrial revolution progress became associated with economic, social, cultural, and political improvement and it was an important tenet of capitalist ideology. Sorel understood this. Working class integration of "bourgeois behaviour and values" in effect meant convincing workers that their interests were synonymous with those of the bourgeoisie. Thus economic progress, identified as a synthesis of entrepreneurial capitalism, industrialisation, and free market theory, was promoted as the inevitable unfolding of human evolution. By infusing consciousness with these attitudes, beliefs and goals, a desire for significant reform or revolution was greatly reduced, as everyone became homogenised into one harmonious middle class.

This concept of *embourgeoisment* helps to decode the Myth of Industrialisation because it provides a link between the exigencies of capitalist development and the construction of a concomitant consciousness. In discussing the desirable technical education of the industrial worker, Sorel writes,

It is a matter much less of teaching him the services rendered by machines than of preparing him to recognize their imperfections. This point of view is entirely opposed to that which we see in men of letters who laud the realized marvels of progress without understanding the conditions under which this progress was produced.

(Sorel, 1969, p. 156)

It is suggested here that an industrial education controlled by the bourgeoisie will result not only in technical competence, but also in indoctrination into a larger ideological system (or myth). The dangerous element here is that these workers will be led to believe that they are subordinated to the machine. Sorel challenges the men of letters to deconstruct their own illusions of progress in order to see the contradiction between rhetoric and substance. When he indicates that progress cannot be separated from the conditions which produced it, he is intimating that an attempt is being made by the bourgeoisie as a class (with the men of letters his immediate target) to dehistoricise and decontextualise progress in order that it may then be promoted as a natural consequence of human existence. Thus the "illusion of progress" to which Sorel refers is identified as the false assumption that progress is a natural law of the universe, when in fact it is the facade which obscures necessary dynamic of capitalist expansionism. In this process, capitalism itself becomes depoliticised, the real life exploitation of individuals becomes a non-topic, and workers become disempowered. In effect, Sorel here accuses the men of letters of

Consider this phrase, and the quote as a whole, from a semiological point of view. In a first order reading, focus is on the "realized" gains of

progress. These gains constitute the signifier. This signifier is then loaded with "marvels" as the signified. Sorel does not object to this reading, that is, he agrees that "progress" can be understood on this primary level as an activity which has the "marvelous" qualities of astonishing advancement and goodness. But he in fact makes a second order semiological analysis when he then uses the first reading itself, specifically "the lauding of the realized marvels of progress" as the signifier. He decodes this sign by exposing the separation of progress from the conditions of its production, and by suggesting that industrial education can also function as ideological indoctrination. Thus he criticizes the men of letters for not seeing the fuller understanding of progress exposed by the collision of the "opposed" "points of view".

This is not to imply that Sorel was against science and invention. Only a few pages earlier Sorel indulged in some lauding of his own, admiring engineering and industrial developments (Sorel, 1969, p. 154). Furthermore, his own writing is peppered with the vocabulary of science: "observation", "verified by", "probed", "justify scientifically", "general laws", etc. Thus, the material fact of scientific advancement and industrialisation *per se* is not his concern. Sorel's point is that these material benefits cannot be abstracted from the social, political, economic and cultural circumstances which initiated and nurtured their development. In short, to decontextualise "progress" is to ignore the human cost.

He is concerned that technological change will be used as an ideological tool to convince workers that there is no fundamental

antagonism between classes. (While not specifically a Marxist, Sorel did believe class struggle to be primary.) If this were to be successful, they would become politically inert. In *Illusions of Progress* he writes, "Many believe that the admiration our contemporaries show for material progress could well be a sign of a harmony of interests"(Sorel, 1969, p. 153). Again we see the usefulness of semiology to reveal ideological premises, and for our purposes here, the underlying mythology. This time, "material progress" signifies social harmony, one of the four central promises of the Myth of Industrialisation. From Sorel's *Reflections on Violence* we can add, " Capitalist society is so rich, and the future appears to it in such optimistic colours, that it endures the most frightful burdens without complaining overmuch.."(Sorel, 1969, p. 68). Sorel clearly connects capitalism to an abundant, harmonious and entrepreneurially free future. There is even an implication of paternalism and welfare here; capitalism does the hard work, society reaps the benefits. The whole process is one of inevitable historical evolution. There is also faith in an expansionistic future, reminiscent of Comte's positivism.

Here are important early examples of "staves", to repeat Levi-Strauss's term. As outlined in Chapter Three, progress, that is, scientific and technological advancement (industrialisation) implicitly promises economic prosperity and social harmony. New information and events are interpreted within the context of this conceptual framework. (The repetition of interpretations consistent with the Myth is also the selective historical memory described by Richard Slotkin.) Consequently, each new "stave" functions to reinforce the Myth of

Industrialisation. We can trace the same fundamental ideas, such as human progress, mastery over nature, evolutionary inevitability, and belief in a future Nirvana, in social theorists, industrialists, economists, and politicians, from the Enlightenment to the modern theorists discussed in Chapter One. Through his concept of *embourgeoisment*, Sorel articulated this pacification of the proletariat and contributed to the deconstruction of the "illusion of progress".

This concern with consciousness had an influence on later Marxist theorists,⁷ most notably for our purposes here, critical theorist Herbert Marcuse. Like Sorel, Marcuse was concerned with the gradual dissipation of critical thought within the general population. His concept of one-dimensionality corresponds to *embourgeoisment* in that it describes the process by which working class consciousness is reshaped by bourgeois values, beliefs and desires. The consequence is the depoliticisation of the proletariat and the erosion of revolution or significant reform as a class goal. This does not actually eliminate fundamental class antagonisms; it merely renders them invisible. The apparent harmony of interests between labour and capital is tied to the promise of a consumer culture and the concept of technological rationality. Marcuse writes,

The products indoctrinate and manipulate; they promote a false consciousness which is immune against its falsehood. And as these beneficial products become available to more individuals in more social classes, the indoctrination they carry ceases to be publicity; it becomes a way of life. It is a good way of life--much better than before--and a good way of life, it militates against qualitative change. Thus emerges a

pattern of *one-dimensional thought and behaviour...* (Marcuse, 1964, p. 12, emphasis in original)

Although Marcuse does not use the term "myth", he is referring to the same process of fundamental enculturation described by Levi-Strauss, Slotkin, Barthes, Sorel, etc. Where Sorel notes "myths are secure from all refutation", Marcuse agrees they are "immune against falsehood." The crucial difference between Sorel and Marcuse, however, is the concept of consciousness, false or otherwise. When Sorel exhorts socialists to use the idea of myth, he is perceiving it as belief, but not belief system. In other words, one may be convinced of the truth of a particular conviction without it conditioning all interpretation.

For Marcuse, consciousness is the essential factor in understanding the world and learning to act in it because it determines not only what and how we see, but value system and desire as well. This is more in keeping with the anthropological concept of myth. Twice in the above passage Marcuse refers to "a way of life". Here is the complete infusion of one's being with interpretative structures and symbols comprised of received, selective historical memory, which function through metaphor as a *de facto* language system. If, as argued earlier, interpretation is shaped by language, it can be reasoned that there is no false consciousness. If indoctrination is indeed impervious to falsification then perception is truth.⁸

But Marcuse is referring here to the same dissipation of critical thought that Sorel describes in *embourgeoisment*. Both writers saw that

the working class was becoming depoliticised through its adoption of bourgeois values and beliefs. Marcuse, however, identifies the reformed consciousness specifically with consumerist culture. In the above quote he refers to this as "a good way of life--much better than before". Implied here is a sense of progress from bad to good which connects consumerism to moral rightness. As mentioned earlier Ferrarotti refers to a "confusion between technical progress and moral progress." The dynamic of myth-making again reveals itself; human advancement has become synonymous with technical innovation in the form of increased commodity production. The re-shaping of working class consciousness described by Sorel and Marcuse has ensured that need and desire are concomitantly structured. To the modern Western individual the virtue of this is self evident. Richard Slotkin writes, "Myth does not argue its ideology, it exemplifies it." This is affirmed here by Marcuse, "...the indoctrination [products] carry ceases to be publicity; it becomes a way of life." Consequently discontent is neutralized, internalized, or personalized because criticism has no legitimacy.⁹

In this analysis we see the intersection of modernity and the four promises embedded in the Myth of Industrialisation. The promise of economic prosperity appears in the form of product abundance, the promise of individual freedom in the form of consumer choice, social harmony appears as seamless indoctrination, and the promise of democracy translates as equal access to shopping malls.

Clearly, the power of the human mind to construct its own truth cannot be overestimated. However, as is illustrated here, this is not

necessarily artificial. Furthermore, the sculpting of modern Western consciousness has been a two hundred year project; it is unlikely we can peel back a curtain of deception in the working class mind and reveal a revolutionary consciousness. Capitalism is not a hoax, nor are the very real gains of working people, economically, socially, and politically. Nor can it be argued that industrialisation is just another bourgeois illusion. Here again, the impact on our lives has been significant and it is not all acid rain and contaminated tuna.

However, it is not the rational qualities of modernity and industrialisation which concern us here; it is their rationalisation. Marcuse addresses this exigency of modern industrial culture in his concept of technological rationality. In understanding the mechanics by which utopian aspects of modernity and industrialisation remain celebrated while the dystopian sides remain invisible, it will be useful to consider more closely the separation between reason and rationalisation offered by this concept.

As discussed in Chapter Three, reason is one of the essential properties of modernity. Belief in this faculty as the supreme human quality is associated with the Enlightenment, the Age of Reason. Increasing secularisation of society at that time required a new source of legitimation. Reason, defined as the human faculty of reflection and inference, became that authority. Such activity is presumed to arrive at truth and, by extrapolation, to provide an objectively thought out explanation for action or ideas. Rationality has also retained a certain constancy of meaning, that is, being endowed with reason. Rationalize,

however, has come to mean "explain away", even to the point of false excuses. (Williams, 1976, p. 212-213).

Following Max Weber, Marcuse focusses on this distorted term. Late capitalism, he states, has increased alienation and socially necessary waste, such as advertising, public relations, and planned obsolescence (Marcuse, 1964, p. 49). These are dystopian consequences of advanced technology and science. This is, however, rational activity in a society which appears to deliver on its promise of the good life, that is, a high standard of living guaranteed by industrialisation. The use of science and technology to dominate nature is reasonable within the closed logic of modernity. The evolution from chaos to order, from primitive to modern is the same pattern which legitimizes the progression from manual to mechanical, from simple to technical, but most importantly,

Thus, the concept of technological rationality illustrates how modern industrial society provides its own legitimacy. If we connect Sorel to Marcuse, a line of thought emerges: *embourgeoisment* of working class consciousness finds its culmination in one-dimensionality, that is, the erosion of critical thinking. The character of this *embourgeoisment* is consumerist, and it takes its credibility from technological rationality. From the fusion of science and technology comes a never ending supply of better and newer consumer goods. Because this abundance functions as evidence that the promise of industrialisation has been fulfilled, this "way of life" becomes legitimized as good, indeed, consumerism becomes almost teleological in its imperative. Thus *embourgeoisment* and technological rationality work comfortably together. *Embourgeoisment*

re-shapes desire, taste, opinion, and belief system. Technological rationality provides explanation and bears apparent witness to the truth of modernity. *Embourgeoisment* eliminates questions by making dystopias invisible. Technological rationality short circuits criticism by providing answers, thus illustrating how democratic, ethically neutral, and inevitable science and technology are.¹⁰

Clearly, the force of rationalization, masquerading as reason, legitimises not only the domination of nature by science and technology, but the domination of human reason itself. This is affected through the shaping of interpretative structures which are capable of accommodating and defusing criticism to the Myth of Industrialisation and the corpus, Modernity. Blind faith in the ability of industrialisation to fulfill its promises goes beyond rationalization, however. It can be argued that technological rationality takes as its premises the force of Modernity

For example, the properties of atomism, reason and autonomy which find their utopian manifestation as the rational autonomous individual, find their dystopian expression as the alienated automaton manipulated by specious rationalizations. But, if we are to understand and accept Marcuse's warnings, we must also believe rational, autonomous individuals exist. The properties of evolution and progress are clearly evident in the inherent deferred gratification so central to technological rationality. But although Marcuse and others addressing this idea¹¹ offer very useful analyses in the deconstruction of the Myth of Industrialisation, their critique is still confined by a technical-industrial framework. Technology is seen as an instrument of

domination used by capitalists to manipulate consciousness. Even in *Soviet Marxism*, where Marcuse applies the concept of technological rationality to the U.S.S.R., he suggests it is used in the same way by the Soviet bureaucracy in order to compete with the West. Thus it retains its capitalist associations. Consequently, while we may use this concept to reveal manipulative aspects of science, technology and industrialisation as an interpretative structure, this may also illustrate why the concept of myth adds another dimension. It allows us to consider how even a reasoned understanding of a rationalized explanation can be caught by the parameters of its own vocabulary. By placing industrialisation within the corpus of Modernity, and by articulating the interconnections between the properties of Modernity and the promises of the Myth, we see that there is a fundamental premise in this issue which ties together many different explanations across the decades from Comte to Marcuse and beyond. Here are examples of how criticism of the Myth is shaped and confined by the Myth's own framework. Even arguments against the manipulative power of industrialisation do not provide the full understanding necessary for us to appreciate the urgency of the environmental crisis which is its legacy. This is, after all, the power of myth and illustrates how a two hundred year old promise can maintain its currency and credibility. *Embourgeoisment* and technological rationality are crucial concepts for understanding the world we live in. At the same time, they function as "staves" in the long discourse of historical memory.

¹ For example see Redclift (1984), Gribbin (1988), or Ramanathan (15 April 1988).

³ It is interesting that Ferrarotti also refers to Rostow in his criticism of "schematicism" in approaches to industrialism. See p. 147, footnote 2 in Ferrarotti (1985).

⁴ This is not to say that only those in "developing" nations are effected by the promise of progression into the affluent society supposedly produced by science and technology. Clearly, this is a motivator for those in Western industrialised countries as well.

⁵ This idea of controlling messages by filtering out unacceptable information is addressed by Edward S. Herman and Noam Chomsky in their recent *Manufacturing Consent: The Political Economy of the Mass Media*. Focussing on the American media, they assert that public opinion is controlled through the filtering of messages and the control of symbols. They name five "filters" which deal with size and nature of ownership, revenue sources, mechanisms of media control, the power of anti-communism, and news sourcing (p. 1-31). This informal process through which selection is made also coincides, they suggest, with the psychological/ideological filtering process active in the consciousness of the honest, patriotic, conforming American reporter (P. 304). Tying political, economic and cultural factors together, they illustrate the power of the media in shaping opinion.

⁶ For a good example of the ideological impact of popular television in a Third World setting, see Bibliowicz, 1980. Also see Ewen, 1976 for an analysis of the political nature of advertising. Postman, 1985, Chapter Two discusses the powerful impact of "media as epistemology".

⁷ This is not to imply that consciousness was disregarded in the interim. In 1923 George Lukacs had, of course, originally published his landmark *History and Class Consciousness* which is a pivot-point in the shift within Marxist theory from econocentrism to a greater appreciation for consciousness. This had a significant impact on the Frankfurt School, including Marcuse. Also in the twenties, Antonio Gramsci was forming his concept of hegemony, which also goes beyond a rigid base-superstructure matrix to include a more comprehensive understanding of human community, including the central role of consciousness. In 1941 Marcuse himself wrote an article, "Some Social Implications of Modern Technology" which formed the conceptual basis for *One Dimensional Man*. However, Larry Portis suggests that Sorel's emphasis on proletarian culture was his most significant contribution to political theory (see Portis, 1980, Chapter 5, and page 88).

⁸ Especially the Frankfurt School. See for example Martin Jay, 1973, *passim*.

⁹ Marcuse admits this himself and suggests it indicates a deeper level of alienation. See Marcuse, 1964, page 10.

¹⁰ Also interesting in this regard is Noam Chomsky's 1984 article "The Manufacture of Consent". He notes that democratic systems do not have the ability to coerce obedience; consequently, it is necessary to "establish a framework for possible thought" (p. 100) to ensure behaviour conforms to ideological exigencies. No overt censorship is thus required. Credible, legitimate news is identified through the tinted vision of indoctrination (p. 106).

¹¹ Jurgen Habermas and Claus Offe, however, have predicted a crisis in late capitalism where the system will no longer be able to fulfill its promises. At this point the failure of capitalism will be irrefutable and critical thinking will return. This would indicate that in spite of *embourgeoisment* an autonomous rational individual may still exist within the Self, which is capable of surviving one-dimensionality and can yet be critical given enough evidence. However, whereas the crisis may well be appearing, there is little observable evidence that a critical position has emerged which proposes an anti-capitalist remedy. In the 1980's what we see is frequently an alternative

explanation which targets not conservatives, but liberal Keynesians, homosexuals, refugees, minorities, women, welfare recipients, etc. See Offe, p. 145 and Habermas, 1973, p. 74.

¹² From Weber, to Habermas, Offe, Aronowitz, for example.

CONCLUSION

It may well be that "you can't stop progress". But as has been illustrated, the idea of progress is going to require serious renovation if we are to survive its consequences. The other properties of Modernity have been similarly questioned here. Evolutionism, taken as natural and inevitable by conservative, liberal, and radical theorists alike is openly brought into question when we consider increasing Third World impoverishment and the environmental crisis we are faced with. Atomism can find its expression in the free, autonomous choice-making individual in control of his or her upward social mobility, or, in the alienated pawn, scrambling for survival. Indeed, the Frankfurt School argues that the individual has been replaced by mass society. Or, as Stanley Aronowitz describes,

The individual, often touted as the crowning achievement of the bourgeois epoch, suffers apparently irreversible decline, individuality is forced to submit to the imperatives dictated by industrialized social and economic administration. (Aronowitz, 1988, p. 131)

Reason has been exposed as, if not a fraud, at least a conceptual shell game. One-dimensionality has seriously eroded the possibilities of autonomy, as well as critical thought. Consequently, in spite of the loud confidence inherent to theories of industrialisation such as those described in Chapter One, they are clearly less inevitable, obvious, moral, and logical than we are encouraged to believe. The "truth" of

modernity and industrialisation is open to question. Its powers of persuasion lie in selective historical memory and the shaping of possible interpretation. Hence it has been argued here that the Myth of Industrialisation is the quiet sophist, no less convincing for the subtlety of its dynamic.

When Sorel and Marcuse lament the loss of our ability to make interpretations inconvenient to capitalist ideology, they are referring to perceptions. However, writers like Hazel Henderson, E.F. Schumacher and many others¹ who work in appropriate technology, or development projects, clearly illustrate that there are indeed economic, political, social, environmental, and cultural alternatives to the all-out industrialisation of the past two hundred years. Alternatives in all fields are offered: education, social organisation, health care, energy sources, financing, agricultural techniques and priorities, etc. These are all addressed in depth, both on a theoretical level and on a practical level in many thousands of projects and communities worldwide. Every local success, no matter how small, is crucial evidence in the battle for reality.

Celso Furtado reminds us that the natural and innate inventiveness of humankind is well revealed in "the wonderful gamut of cultures" that history has witnessed. Furthermore, "...at accumulation levels that seem extremely low in present-day terms, civilisations were produced that are still in many ways unsurpassed." (Furtado, 1983, p. 83). While he admits that this creative impulse has been subordinated to technical rationality, he argues that the "technopolis" was not inevitable and that

science itself is a great locus of human creativity (Furtado, 1983, p. 84-85). Just as Sorel believed that many but not all people were subject to the persuasions of myth, and Marcuse while describing one-dimensionality, still held out hope for a liberated individual, Furtado in spite of his pessimism also provides a possible site for opposition. Still, the reality gap seems unbridgeable. On the one hand, many practitioners insist there is an alternative to perpetual industrial expansionism. On the other hand, those who analyse the ideological impact of technology allege "you can't stop progress" in confused chorus with theorists like Rostow, Organski and Apter.

It is in understanding this disjunction that myth is useful. The contradiction will not dissolve itself in the wishful thinking of those who feel, with Henderson and Schumacher, that we need only counter bad information with good information. As the theory of myth argues, it is not what we say, but what we hear which determines our beliefs and commitment to act. The free, autonomous individual of Apter's theory still makes her choices with a consciousness structured by the limitations of the options. The realm of possibility is confined within the narrow parameters etched by modernity. Even after reading the thoughtful analyses of Herbert Marcuse we see he still believes, at least at the end of *One-Dimensional Man*, that technology is the "very base of all forms of human freedom". (Marcuse, 1964, p. 231). Thus he argues, along with Schumacher, for a reformed technology with a human face. Here is the power of hegemony and its agent, myth. As Stanley Aronowitz writes, "...the meaning of 'hegemony' consists precisely in its

presence within the discourse of opponents of the dominant ideology." (Aronowitz, 1988, p.22)

It seems that we are faced with a crisis of imagination. As Furtado points out, there is no serious reason to believe human creativity is a limited good; indeed, history indicates the opposite. We bind imagination at our peril. This is the silent power of myth; it does not stifle or destroy creativity and imagination. It shapes them with the persuasiveness of false memory and technical rationality. Each new generation affirms the precinct of culture and the locus of epistemology. This is not determinism; it is seduction. Culture provides individual, as well as social identity. It teaches what human nature is (free, autonomous individual), what values to assimilate (entrepreneurialism, consumerism), and which symbols of communication constitute legitimate language (the idiom of utopian modernity). In other words, culture, with myth as the vehicle, provides the framework for ascertaining the nature of acceptable knowledge.

The Myth of Industrialisation is part of this process. It sanctions the source of its own existence--science--as the only legitimate source of knowledge. This is clearly illustrated in the positive philosophy of Comte discussed in Chapter Four. Historically, there have been other ways of knowing: spiritually, intuitively, philosophically, and empirically. Scientific knowledge is based on empirical enquiry, yet it is only that empiricism sanctioned by science which qualifies as knowing. The evidence of our own senses tells us that the living environment we inhabit is dying, and that the majority of the world's

population is being increasingly impoverished. Two hundred years of industrialisation appears to be the cause. Yet we are told that no, the problem is that there is not enough industrialisation to generate sufficient revenues to reach our potential, that emission levels are within allowable limits even if the fish do die, that as soon as the "primitives" start buying enough chemical fertilizer, the tractors come, and the dam is finished, the new miracle seeds will provide a good export harvest.... In this way, the empirical evidence of our collective and consistent experience does not constitute legitimate knowledge because it is not sanctioned by science. It is only a force with the persistence of myth that can, generation after generation, shape consciousness with such authority that rational individuals deny the knowledge of their own senses.

What then of the post-industrial age? This refers to the trend in the North to move away from heavy industry and large-scale consumer production, toward information technologies.² This includes electronics, telecommunications, computers--generally the most sophisticated methods of data transfer useful in communications industries and international finance (including investment and money markets).³ "Post-industrial" also refers to the growing predominance of the tertiary sector of the economy in the North, while in the South, foreign owners fragment production activity and spread it around the Third World. But of central concern here is the concept of the "information society". The volume of information received by the individual has increased greatly as a result of these technological advances. Some developments which are commonplace include home computers, public-access data banks, an

explosion in the number of books, journals, and magazines published, all-news television and radio stations, satellite dishes, cable television bringing a vast choice of channels, as well as video and audio recorders (so we can collect information in one location while recording other information elsewhere at the same moment). Highly sophisticated media technology has also been produced which allows news and video clips of a flood in Bangladesh or a massacre in Lebanon to reach North American "audiences" in the space of a few hours.

One would assume, then, that the individual of the 1980's is much more knowledgeable and less easily manipulated than the one-dimensional automaton of Marcuse's sixties, Gramsci's thirties, or Sorel's 1900's. As Edward S. Herman and Noam Chomsky have illustrated in *Manufacturing Consent*, however, the political economy of information services has resulted in the tighter control of knowledge.

It is also argued that while we are bombarded with an ever increasing volume of information, both meaning and communication have deteriorated. Jean Baudrillard suggests information "devours its own content". Information transmitted, he writes, fails to produce meaning because it "exhausts" itself "staging" communication. Examples he uses are directionless interviews and phone-ins, where we witness the commodification of talk but no meaning is produced.⁴ Thus, the form of communication substitutes for significant content, or as Baudrillard succinctly phrases it, "a precession of the model...eradicates the real". The model (the recognized form of communication, for example an interview) is staged in what he terms a "hyperreal" fashion. Because of

its intensity, the model/form of communication functions as a decoy and meaning becomes lost (Beaudrillard, 1980, p. 139).

An example might be television news coverage of the 1984 Bhopal disaster in India when an accident at the Union Carbide chemical plant resulted in thousands of deaths and injuries. Coverage conformed to the accepted model of news reportage: verbal description of the actual event, video clips showing the dead and maimed, interviews with victims, and a short, prepared statement by the company. The sheer intensity of sensationalism (hyperreality) ensured that meaning was lost. Even though questions such as, how could this have happened, and who will pay, were asked, the real issues were never taken up by the mainstream "communication networks". The nature of industrialisation in the Third World, the production of toxic chemicals in a highly populated area, the pressure by international lenders, development theorists, and local elites for greater foreign investment in Third World countries, urbanisation of the poor and vulnerable, insufficient environmental concern, and the question of underdevelopment, are all crucial and central issues in the real meaning of that horrible event. Industrial consciousness, however, interprets Bhopal as an isolated mishap, a fragment. In this way, even aggregated bits of similar information will not become a sign of structural underdevelopment or an indicator that industrialisation *per se* needs reassessment.⁵

Theodore Roszak agrees that while information does not mean more knowledge, in the so-called post-industrial age information has taken on undue importance as a significant advance in human development. Indeed,

it is being worshipped for its own sake, he suggests in his title *The Cult of Information*. Roszak centres his critique around the computer, or more precisely, on the illusions which surround it.

This field is certainly on the cutting edge of the Myth of Industrialisation. As Roszak points out, the negative impact of high tech production is considerable: low wages, unskilled jobs with no opportunity for even minimal advancement, monotonous work, a number of serious occupational health hazards, non-union plants, run-away shops, job insecurity and a lower standard of living for workers (Roszak, 1986, p. 28). This dystopian picture, however, is not the optimistic image presented by advertisers and enthusiasts. The high tech revolution trades on the well-worn promises of the Myth of Industrialisation.

Roszak argues against claims that computers resemble human intelligence. He makes careful distinctions between computation and thought. Human memory, he reminds us, "is more like a stew than a filing system" (Roszak, 1986, p. 98). Most importantly he separates logic and reason. *"The mind thinks with ideas, not with information."* (Roszak, 1986, p. 88, emphasis in original). Thus thought precedes information; we perceive and interpret with ideas already in the mind (industrial consciousness, in the present context). Computers, and their capacity to provide us with convenient bits (bytes?) of information do not make us smarter. The information age in no way reduces our susceptibility to the Myth of Industrialisation. indeed, the Cult conforms well to the Myth. Roszak himself describes information technologies as "another stage in the ongoing industrial process". It is, "an outgrowth of the existing

industrial system" (Roszak, 1986, p. 29). From this point of view there is no post-industrial anything. Perhaps it is a sign of how fully we have integrated the Myth into human existence that industrial consciousness is so willing to anthropomorphise machinery. The illusion that computers have memory (rather than store data), and think (rather than process the data as programmed), is a conceptual fraud taken up and promoted with an *elan* which makes computer fans indistinguishable from the salespeople. The possibility of a sober reassessment of industrialisation as desirable and inevitable appears ever less likely; boosterism is not conducive to critical thought.

The system, however, is not inevitable, nor is the Myth a seamless perfection. The dystopian side of industrialisation and modernity is very real. Although the tide of power is not likely to turn in the short term, we cannot wait forever. But signs of hope are emerging. The global nature of the ozone and greenhouse problems, as well as those of ocean pollution and rain forest destruction, has ensured that environmental awareness goes beyond small groups of conservationists concerned with these crucial issues. Some new public policy has been enacted, such as that reducing the production of chlorofluorocarbons. Sweden has banned nuclear power. The growing popularity and importance of "green" parties and of new social movements indicates that a grassroots movement is generating. But time is pressing. We cannot hear the environmental and underdevelopmental critiques of industrialisation because the Myth of industrialisation ensures we privilege only the utopian side of the paradox. In order to subvert this reading we must challenge the very epistemological base of Western civilisation--science. This is surely a

monstrous task. We have, however, been held ransom to the promise of technology long enough. If we are to plan realistic alternative futures, we must free autonomy, reason, and imagination from the confines of predictability and the limitations of modernity.

¹ For example, Ivan Illich, Frances Moore Lappe and Joseph Collins, Gustavo Esteva.

² One may suggest there is another interpretation of "post-industrial". This is represented by the works of theorists such as Andre Gorz or Murray Bookchin. A total economic, social and political restructuring is called for, which will favour an improved quality of life for every individual ahead of favouring the exigencies of private profit. In such a society environmental and human concerns are primary. See, for example, Gorz (1982, 1985); Richards, ed (1983); Bookchin (1986, 1982). These ideas will not be discussed here, however, because they do not directly bear on the problem of over-industrialisation.

³ Referring to the U.S. economy an A.T. & T. advertisement is quoted as indicating "Information has finally surpassed material goods as our basic resource...a new form of capital." (Roszak, 1986:24).

⁴ One may also include superficial, but intense news reportage of natural disasters or train wrecks, etc (with colour video clips), specious "debates" between such supposed adversaries as the editors of the *Financial Post* and the *Financial Times* such as we often see on the CBC-TV's *Journal*. Interviews which illustrate Beaudrillard's point would be victim interviews, or the one with multiple murderer Ted Bundy's mother on the day he went to the electric chair.

⁵ The political economy of news coverage is also of concern here. The analysis Herman and Chomsky use of American political enemies can be extrapolated to this situation in that what they term the "filter" system works in the same way for the same beneficiary. See Schiller, (1973, p. 24-27) for a discussion of the social and political function of the fragmentation of information. Jean-Pierre Dupuy also discusses the paradox of more information-less meaning. He further notes that the "information society" not only fails to foster harmony, but it increases alienation as well. (Beaudrillard refers to this as the "implosion of the social"). Dupuy adds that in the post-industrial society the "monopoly of economic activity over the social and political dimensions of our lives" is extended, intensifying the struggle for survival. Acting, making, and fabricating have been replaced with consuming and increasing meaninglessness (Dupuy, 1980).

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