ARGUMENTATIVE DISCOURSE STRUCTURE IN

CHINESE AND ENGLISH WRITING:

A COMPARATIVE ANALYSIS

by

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B.A.(English), Fu-jen Catholic University, 1981

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS (EDUCATION)

in the

Faculty of Education

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Simon Fraser University

March, 1986

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Degree: Master of Arts (Education)

Title of Thesis: Argumentative Discourse Structure in
                         Chinese and English Writing:
                         A Comparative Analysis

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<u>ARGUMENTATIVE DISCOURSE STRUCTURE IN CHINESE AND ENGLISH</u>

<u>WRITING: A COMPARATIVE ANALYSIS</u>

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ABSTRACT

The purpose of this study is to seek explanation for
the inappropriate discourse structure frequently found in
Chinese ESL (English as a Second Language) students'
writing. Contrastive analysis and error analysis have
indicated that native language structures are a major source
of errors in second language production. Extending the
structures from sentence to discourse level, I hypothesize
that written argumentative discourse structure differs
between Chinese and English (and, as the data turn out to
suggest, between discourse communities, such as communist
and capitalist ones).

An account of discourse structure is also demanded by
remedial writing programs and analysis of oral language in
psychotherapy and educational research. Rhetoric fulfills
this demand by extracting a "grammar of passages", which can
reveal various discourse structures (a kind of conceptual
frame that channels information processing) thus making
comprehension and production in both first and second
languages less perplexing to learners and to researchers.

From eight newspapers (half in Chinese and half in
English), I sampled forty editorials, which were represented
on a two-dimensional matrix based on the relative level of
generality of each proposition in the discourse.

Statistical analyses showed no significant interaction
between the two major independent variables, language and
political stance (i.e., their effects do not overlap).
Language affected both macro- and micro-level structure

while political stance affects micro-level structure. The Chinese editorials had more coordinate structures at macro level and more clauses elaborating ideas at micro level than did the English ones. The communist editorials were developed, at the micro level, more by coordinate ideas under a generalization and less by subordinate ideas (details) than were the capitalist ones.

Pedagogically, this study indicates that both native and second language teachers should be aware of the reading and writing problems caused by discrepant discourse structures. Instrumentally, this study provides a tentative basis for instruction and a model for research based on a matrix capable of revealing and eliciting desired discourse structures. Theoretically, this study connects language learning to communication and rhetoric, thus expanding the boundaries of language to structures greater than sentence and to the context.

ACKNOWLEDGEMENTS

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CHAPTER ONE

INTRODUCTION

A. Aims

This study, like many others, aims to be "theoretical

only that it may become practical" (Richards, 1936: 19):   in

cross-cultural reading and writing, problems caused by the

differences in "patterns of thoughtflow in a discourse"

(Rogers, 1970: 178)--which constitute the semantic structure

of that discourse--have brought us back to related

theories--e.g., linguistics, rhetoric--in order to find

practical solutions to the problems.

This study has aims on two levels (specific and

general) which endorse each other.   The specific aim is to

find out whether two sets of newspaper editorials on

domestic economy, written in Chinese and English

respectively, exhibit significant differences in idea

arrangement.   Underlying the empirical analysis of these

editorials is a more general issue: whether sociocultural

background has any significant effect on the arrangement of

written argumentative discourse.   And if so, in what ways?

The results of this investigation may suggest practical

improvement in second language reading and writing pedagogy

to enhance the reading and writing skills of Chinese English as a Second Language (ESL) learners.

Arrangement here denotes the ways by which one proposition, or idea, is connected to another in a discourse—the semantic structure of discourse. Arrangement is the second department of Classical Western rhetoric, dispositio, a department concerned with whether and where ideas should be in a discourse. Despite its direct association with logic, and its immense impact on decoders' interpretation (where meaning resides) arrangement has not yet attracted sufficient research attention to uncover the nature of arrangement.

As Goetz and Armbruster (1978) conclude, two main reasons for the scarcity of research on arrangement are: first, it is difficult to explore text structures (the arrangement) independently from the content, which belongs to the first department in Classical Western rhetoric, invention (inventio); second, the domination of behaviorism has debased all the unobjective research techniques, to which anything associated with meaning will always belong. Both of the reasons are methodological, and the second may provide a critical perspective on the considerable work on cohesion, e.g., Halliday & Hasan's study (1976, Chapter 1), which analyzes objectively categorized cohesive devices and claims to account for coherence of discourse (while actually discussing devices that signal the syntax of a discourse).

Although there is not much empirical research to substantiate inferences about the functioning of

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arrangement, several major studies concerning language and/or thought coincide in the assertion that a frame-like system governs the production and comprehension of information in such a manner that information not fitting the system may be rejected , or distorted to fit--that is, misunderstanding can occur when information is processed to fit the preferred frame. Misunderstanding may be even greater when communication involves more than one distinct frame.

Burke's discussion (1953) of the appeal and nature of form may lead us from the descriptive up to the explanatory level. Form in discourse, Burke asserts, is "an arousing and fulfilling of desires" (p. 124); an "unintended emotional effect" may sometimes occur and obstruct such arousal and fulfillment--form functions adequately only when it gratifies the very needs that have been created by the encoder. Once forged, a form creates a "categorical expectation" for interpretation. Sometimes this kind of expectation can render otherwise meaningless aspects meaningful in either a conscious or an unconscious process as, for example, Goffman's "primary frameworks" (1974) function. Formal obstacles arise when textual or contextual structures requiring specific categorical expectations change because the expectation of the decoder may conflict with the form of the information presented. Devices of this kind take on various labels, including Burke's "terministic screens"(1968), Kintsch's "formal frames"(1975), Rulmelhart's "schemata" (1977), and Goffman's "primary

frameworks" (1974). In addition to these devices born of cognition and perception theories, Shaughnessy (1978) adds one more insight, along the same line, based on her eminent empirical work on first language writers: A "grammar of passages" capable of delineating the possible ways to structure and convey information effectively is important for teaching effective writing. Only with an explicit standard can we predict the degree of acceptance a discourse can achieve.

Since language and socialization interfuse—as Vygotsky (1962) and others (e.g., Bernstein, 1971) assert—cultural elements[1] can significantly influence language formation, of which the frames discussed above are a part. It is reasonable to hypothesize that cross-cultural communication likely involves conflicts among different frames, and very likely results in impediments to effective communication.

The patterns may be revealed more easily when, instead of linguistic subsystems, two or more linguistic systems with radical cultural differences are contrasted, e.g., the differences may be more obvious between Chinese and English writing than between black English and standard English. This study, therefore, aims at a closer examination of the relationships between sociocultural background and the patterns of arrangement in writing, as examplified in Chinese and English argumentative writing.

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B.Motivation

This study is a response to the practical problems of writing arrangement, in both native and non-native language coding--including reading (decoding) and writing (encoding). The emphasis in this study is on non-native language coding because there the arrangement problems are magnified. The study is further propelled by the paucity of the research in arrangement because research on arrangement is indispensible for both theoretical understanding of second language coding and practical implementations in pedagogy.

Writing and speech are two different linguistic modes of thought representation: graphic and acoustic. Because writing employs a higher degree of strictness in both discourse generation and arrangement than does speech, it has long been used rather widely as an instrument for academic assessment (usually for knowledge retrieval); thus writing can be a determinant of promotion. Writing is also useful intrinsically as a process of inventing and arranging thought. Writing is, therefore, alleged by a consensus of researchers in the humanities to be closely related to cognitive development (e.g., Flower and Hayes, 1980; Emig, 1977), which is one of the central purposes of education.

The following discussion will focus on three areas: the practical discourse arrangement problems in learning, the results (especially when writing is used as an

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assessment), and a general overview of research on
arrangement.

(i) Problems in Learning

        Some learners encounter difficulties comprehending
and/or producing acceptable written discourse while having
no significant difficulties with sentence-level structures.
This problem is even more frequently encountered by second
language learners, who may verbalize thoughts by routes
somewhat different than those of native speakers. For
example, Kaplan (1968) comments that Chinese ESL learners'
writing lacks unity and coherence, and seems unable to get
to the point. The writing of second language learners is
often slashed by instructors for being "illogical," even
when it may seem perfectly logical to readers sharing the
same language background as the writer.
        The apparent mismatch may be explained by the fact that
there is more than one "logic" which can be adopted for
arranging thoughts. We may hypothesize that different
cultures have different bearings on their members' thought
arrangement, which is ultimately inseparable from thought
invention (i.e., thinking). The logical aspect of thought
arrangement is by no means the only aspect influenced by
culture. However, it is the one used in reasoning, thus is

the one underlying rational decision-making and discursive discourse.

Functions of discursive discourse (i.e., the kind of discourse that emphasizes reasoning) are screened by various ideological frames in particular societies or cultures. These frames include what is called objectivity in the scientific approach that Western society values greatly. This screening makes the logical aspect of form less flexible than the aspects Aristotle calls emotional and ethical. Being directly related to logical appeals, argument is surrounded by more restrictions than narration or description.

(ii) Results of the Problems

Post-secondary education demands of students not just more complexity of thought but also specific techniques for presenting thought, often in the form of argumentative discourse. An explicit purpose of this demand is to develop independent judgement and an implicit purpose seems to be training individuals to conform to standards of a socially established communication system. Many learners, especially in second language or dialect groups, may drop out of school, especially at post-secondary levels, in part because they lack the ability to present acceptably arranged ideas. Very often this inability is essentially a result

of insufficient--or no--explicit instruction in arrangement.
These learners may, as a result of this inability, refrain
from higher education, thus have less chance to develop
their potential, and thus be less competitive in the society
and have less access to economic or politicai power within
the system.

Therefore, if certain patterns are preferred to others
(or standardized), the patterns and their functions should
at least be explicitly taught in the school system. That
way all learners, no matter what their normal arrangement
patterns, would have access to patterns of discourse that
are acceptable in the learners' particular society, thus
avoiding the disadvantage that results from not knowing
communicative conventions.

(iii) The Research

Arrangement did not receive strict systematic analysis
in the 20th century until as late as the mid-1960s, when
Christensen's study (1965) on modification patterns,
Pitkin's on "discourse blocs" (1969), and Rodger's on
"stadia" (1966) were published. Before then, much of the
effort of rhetoricians was invested in research on style, as
a continuation of a longstanding trend in rhetorical
research and pedagogy (Johnson, 1984). In the mid-1960s,

the focus switched to invention in a process-oriented pedagogy, which guides learners through effective ways to generate writing.

Studies on arrangement are scarce. Furthermore, among these already scarce studies, a large portion are flawed either in application (the instrument) or theory (substantiating the research hypotheses). Some are theoretically well grounded, yet based on techniques too cumbersome to be used in either experimental or classroom contexts—e.g., Nold and Davis' matrix (1980); others are so loosely constucted that they are hardly more systematic than intuition, e.g., Kaplan's contrastive rhetoric (1967). But arrangement problems have not vanished just because they are beyond resolution with the limited existing instruments. On the contrary, they may have worsened precisely because of the absence of adequate instruments to reveal them.

This study is not only stimulated by needs, but also is inspired by a recently developed instrument that promises relatively simple implementation and credible results.

C. Assumptions

(i) Function Instead of Mode

Modern researchers have reinvestigated the conventional division of writing into four modes (narration, description, exposition, and argumentation) and found it inadequate. For example, in his longitudinal study of first language acquisition, Britton (1975) concludes that there is scarcely any written discourse which embodies one mode only; most pieces of writing use more than one mode. Coe (1981) is in agreement with Britton's conclusion. Following Richards (1936), Coe explains that most discourse involves value judgement, hence is tinted by suasion. Thus suasive function is traditionally subsumed under argumentative functions but actually impinges on all modes. Burke (1953) views this overlap of functions as the "interrelationship of forms". So, to say a discourse is in a certain mode is not accurate--the modes of discourse are distinct only analytically; functionally they are interrelated. In this study, I assume that the functions a discourse serves can better explain why and how one discourse is arranged differently from another.

(ii) Argumentative Function

Discursive discourse, based on reasoning, is cognitively more sophisticated, thus more complicated than other discourse. Matsuhashi (1981) finds that the pauses in the writing process are significantly longer when the subjects are asked to convince someone than when they are asked to report. The results of Matsuhashi's experiment suggest that argumentation, as compared with narration or description, requires more sophisticated cognitive effort.

Thus I assume that using newspaper editorials for the present analysis may increase the study's validity because the editorials' argumentative function better reflects writing competency than do other functions. When the topic area is controlled (to allow for possible conventions for discussing specific subjects) and time of publication is controlled (to constrain sociocultural conditions), validity is further enhanced.

(iii) Sources

I selected Chinese and English for the analysis not only because English is the foremost international language

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and Chinese is locally the first language of a great number
of ESL students attending schools under grade 12 in
Vancouver but also because the well established writing
conventions of these two languages are entirely independent
of each other. If significant differences parallel to
these conventions are found, they can more easily be
attributed to the nature of their source languages. In
short, I analyzed newspaper editorials because they have
wide readership, they better reflect writing competency, and
they can reflect the cultural impact on the discourse.

(iv) The Average-out Effect

    Since newspaper editorials are collaboratively written
(or at least approved) by the same group of people for each
newspaper, there possibly are idiosyncracies of the
discourse structure caused by personal preferences and/or
institutional slants. Thus for each language and political
group, editorials from different newspapers are included to
cancel out such idiosyncracies.
    Five editorials were selected from each of eight
newspapers, with the sample size totalling forty. The
sample size is a compromise between an attempt to avoid a
biased sample and the time restriction on this study. For
an analysis as detailed as this study, the sample size is
large enough to yield significant results.

(v) Analytical Unit

The instrument used for the analysis is a discourse

matrix developed by Nold & Davis (1980) and modified by Coe

et al. (1986). This matrix is capable of delineating

semantic relationships among propositions composing a

passage. And the matrix is flexible in allowing the use of

different propositional units: clause, T-unit, or sentence.

The clause is the analytical unit chosen here because

the clause best isolates propositions, and clauses are

clearly common in all languages, including Chinese and

English. Different languages elaborate thoughts

differently, but how to elaborate may vary widely when

writers emphasize different parts of an argument. The

varied ways of elaboration constitute arrangement itself,

thus should be accounted for.

The sentence, by contrast, is too superficial a

structure to isolate the underlying propositions because its

boundaries are determined mechanically by punctuation. The

T-unit--a main clause with optional subordinative elements

(Hunt, 1965)--has boundaries contigent on the syntactic

links between sentence parts: complex conjuncts (e.g.,

although, if) do not signal T-unit boundaries, while

compound ones (e.g., but, and) do. Unfortunately, there is

no absolute consensus on the distinctions between complex

and compound conjuncts either in English or (especially) in

Chinese. To compare two languages so vastly different, the

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clause is definitely more appropriate than T-unit or
sentence.

D. Significance

Theoretically, this study considers the possibility
that different languages and political stances may have
different discourse patterns, and that writing is related to
cognitive development as well as to social development.

Much as contrasting the native language in second
language learning with the target language, competent
writing can be contrasted with incompetent writing. The
findings resulting from such contrast provide a new
perspective for language transfer problems in second
language learning. Also, the findings may reinforce
theories about the impact of socialization on language
development.

Instrumentally, this study shows that discourse
structure can be quantified and represented visually.
Therefore the characteristics of specific discourse
patterns--including those of incompetent writers--are
perceivable and (statistically) analyzable.

The matrix can be applied in teaching and research in
both reading and writing, and in both first and second
languages. By revealing the structure of a written text,
the matrix may enhance reading comprehension. By
contrasting competent and incompetent writing, the matrix
may help diagnose and resolve learner's problems in written
production; furthermore, the elicited patterns can function

as generative forms for the writer.

Pedagogically, this study suggests that reading or writing teachers in both first and (especially) second languages should be conscious of problems caused by these patterns, and should overtly instruct their students to recognize and produce patterns required by the communicative context.

This study also suggests that writing (especially in arrangement) is closely associated with a certain cognitive sophistication because writing demands a complex and conscious organization of thought. Thus writing is excellent training in thinking as well as communication. Writing is therefore even more important as a process than as a product: first, instruction would be more effective if writing were taught as a process, not just as a product; second, when writing is used as an instrument in education, it would probably be more useful for teaching of thinking, than just for assessing the products of thinking.

Footnotes

1.   Culture here refers to "the body of customary beliefs, social forms, and material traits constituting a distinct complex of tradition of a racial, religious, or social group" (Webster Dictionary, 1981: 552).

CHAPTER TWO

LITERATURE REVIEW

A. Language Transfer

(i) Contrastive Analysis

Several influential theories in second language
learning have examined the sources of learner errors. Among
these theories, the two most widely applied are contrastive
analysis (hereafter CA) and error analysis (hereafter EA).

CA was developed by Lado and Fries (1943), who compared
the grammars of languages involved in second language
learning, primarily to better understand language learning
in general and, secondarily, to aid second language
pedagogy. They hypothesized that it would be easier to
learn target language structures similar to native language
structures, whereas to learn different structures would be
more difficult and they would be a source of error. Fries
later (1945) claims:

> The most effective [pedagogical] materials are those
> that are based upon a scientific description of the
> language to be learned, carefully compared with a
> parallel description of the native language of the
> learner. (p. 9)

Actually, to attribute learner errors to the native tongue had been common for second language teachers (Sridhar, 1981). CA paralleled second language teachers' experiences. This assertion is strengthened by Jacobovits' (1969) theory of learning (which is that when more than one linguistic system is competing with one another in a learning process, interference takes place). CA was accepted with zeal and many people (e.g., Banathy et al., 1966) believed that CA was the panacea for almost all problems in second language learning, although no CA proponent ever made such claim. CA does have great success in predicting phonological errors; however, it has far less success in predicting and explaining morphological and syntactic errors (Richards, 1973).

Because of a mismatch between actual errors and the predictions based on CA, second language teachers believing in CA pedagogies may waste their time drilling the structures that CA predicts will be problematic when actually the learners might never make those particular errors (Wilkins, 1976). Despite the mismatch, applications show that CA can predict an infinite number of potential errors. Two major flaws of CA are in (1) not taking actual learner discourse into account but making a priori predictions, and (2) neglecting language function when focusing on language form. With regard to the second problem, when Lado predicts that

those elements that are similar to the . . . learner's
. . . native language will be simple for him, and those
that are different will be difficult (p. 2)

the prediction fails for a good reason: similar forms are
often not used for similar functions, and the extent to
which forms differ does not translate into corresponding
degrees of difficulties.

The mismatch between prediction and actual errors does
not necessarily mean that attributing error to the first
language is erroneous. Rather, it may suggest that language
learning is more complex than a simple translation process
from the first language straight to the second; it may be
complex enough to involve more than one source of
interference. Contextual factors, social and cognitive
elements may all come into play. Even after we exclude all
non-linguistic factors, there may still be room for errors
resulting from interaction between the first and second
langage systems, e.g., learners may overgeneralize
grammatical rules in the second language, based on their
knowledge of their first languages.

(ii) Error Analysis

Error analysis--described by Richards (1974)--also attributes some learner errors to the first language. EA provides a classification of errors (Richards, 1971, cited in Schachter and Celce-Murcia, 1977, p. 43):

(1) interference errors
[first language is the source]

(2) interference errors
[second language is the source]

(3) developmental errors
[the language learning process is the source]

"Errors" are here characterized as "differences between the way people learning a language speak, and the way adult native speakers of the language use the language" (Oller and Richards, 1973: 114). Compared with CA, EA obviously takes into account more elements in attributing errors to their sources. Another significant difference between CA and EA is the focus of analysis. EA compares not grammars, but actual learner performance.

Schachter and Celce-Murcia (1977) conclude that EA is the successor and the counter theory to behaviorism, on which CA is based. CA interprets language learning as essentially one kind of habit formation:

> learning a foreign language is always a matter of
> acquiring a new set of language habits against a
> background of an older set of language habits. (Fries,
> 1954, p. 11)

EA, on the other hand, proposes a "pro-Chomskian", creative language learning which emphasizes the active interaction learners initiate with the new language.

Researchers turned from CA to EA because EA considers a greater range of possible sources of such errors and, instead of predicting errors, EA analyzes actual errors. But EA itself is not without flaws. Two major flaws of EA that Schachter & Celce-Maricia observe are (1) the similarities between the first and second languages that CA accounts for (by analyzing grammars) are not included in EA, thus are not uitlized in faciliting instruction. (2) more than one error source is included in EA, and no researcher has explained how errors can be attributed to a particular source, nor accounted for interactions in the process of second language learning, or for overlaps among the three sources. Moreover, EA assigns degrees of difficulty to the structures in the target language according to the absolute frequency of error occurrence rather than to the percentage of the frequency; EA analyzes only errors in language production and fails to look at structures common to the languages involved.

In fact, some of these weaknesses (e.g., the sampling) can be overcome by using CA to supplement EA with grammar, a more extensive basis of analysis than error occurrences (Schachter, 1974). Though researchers lost enthusiasm for CA because of unresolved problems (i.e., the predicted

errors often do not occur), the analysis is not necessarily entirely mistaken. CA does offer a systematic examination of the language transfer problem.

However, Fries did not analyze structures beyond the sentence level, nor did Schachter and Celce-Murcia, whose main criticism of CA is that grammars are its sole data source. In fact, CA and EA's "scientific description" of the native and target languages (Fries, 1945) is not complete in the sense that the description does not fully account for semantic aspects of language. Shaughnessy (1977) has argued that meaning resides in structures across sentence, that is to say, beyond the limit of traditional grammar. Goetz and Armbruster (1981) reach a more general conclusion than Schachter and Celce-Murcia's: scientific research, including linguistics, is confined to stark "objective" methods which impede in-depth analysis of languages.

We need to look beyond linguistics to rhetoric, because rhetoric covers a broader territory, including the relation between encoder and audience, and the communication situation.

B. Contrastive Rhetoric

Research on second language learning has long
attracted attempts to clarify factors that hinder the
learning. Proponents of CA and EA alike have hypothesized
and empirically proven that the learner's native language is
a major source of errors in second language production.
However, the native language structures investigated have
traditionally been only those accessible to linguistic
analysis on and below the sentence level (i.e., grammatical
analysis), probably because of the absence of appropriate
instruments to account for structures beyond sentence
boundaries. The research that does take account of
contextual attributes--e.g., discourse analysis pioneered by
Hatch (1978)--still interprets the constituents of discourse
(e.g., sentences), rather than the relationships among these
constituents.

Nevertheless, the reading and writing problems that
second language learners encounter indicate that there are
distinctions among languages beyond linguistic description
confined to the sentence level. Kaplan (1965) pioneered
"contrastive rhetoric" based on the transfer theory, as CA
and EA are. The theory is that, in written discourse,
second language learners transfer culturally typical
rhetorical patterns from their native languages to the
second language. Kaplan describes various problems ESL

students encounter in writing coherent English compositions
and the problems in translating other languages into
English. He suggests that an important cause of these
problems is the difference between the culturally typical
rhetorical patterns.

> Obviously, such a development [parallel structures in
> Semitic language] in a modern English paragraph would
> strike the modern English reader as archaic or awkward
> and more importantly it could stand in the way of clear
> communication. (1967: 8)

The graphic representations of the culturally typical
rhetorical structures Kaplan hypothesizes are as follows:

Figure 1

Culturally Typical Rhetorical Patterns

(p. 15)
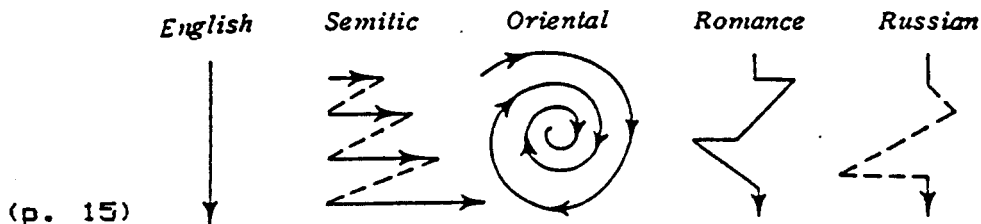
Kaplan (1968) further attributes the inappropriate
discourse arrangement of Chinese ESL students to a specific
source in their native language: an archaic and obsolete
Chinese rhetorical form, the "eight-legged" structure
("Eight-legged" is an awkward translation referring to an
eight-part structure called "   ", ba-gu, which originated

in China in late 500 B.C. as the prescribed writing format for the civil service examination; it was abolished in the late nineteenth century). The "eight legged" structure is essentially a repetitious and parallel structure, which may fit into the "spiraling" pattern Kaplan finds to be typical of Oriental writing. But without any specified guidelines, Kaplan segments a few pieces of writing by Chinese ESL learners, imposes his perception on the structure of these writings, then concludes that those students applied this "eight-legged" structure in their writing. Bander (1978) agrees with Kaplan's contrastive rhetoric. He emphasizes that second language learners' awareness of the differences between different rhetorical patterns can accelerate the development of their writing proficiency in the target language. Also, after examining Kaplan's diagrams of the culturally typical "thought patterns", he concludes that a traditional rule of English discourse, "coherence", is the principle of the thought pattern typical of English writing because discourse development in English writing should be direct and linear.

Contrastive rhetoric is worthy of further research because it extends transfer theory (in which lies the merit of CA) beyond the sentence level (which is the limitation of CA). But Kaplan's analysis is seriously flawed. Matalene (1985) criticizes Kaplan's sample (writing of Chinese native speakers in an American university) as out of actual cultural context. Segmentation of texts to extract overall

text structure, moreover, requires that criteria for
segmentation are clear and explicit. Kaplan's conclusion
cogently suggests how a rhetorical pattern can force the
reader's interpretation of a written text into the desired
frame; but Kaplan does not prove that the writers actually
applied the pattern. We can systematize and replicate the
process of uncovering discourse pattern only if we segment
text according to structural principles.

C. A Historical Review of English Composition Pedagogy

In Classical Western rhetoric, an oration can have up to eight parts: (1) introduction, (2) narration (background knowledge), (3) thesis, (4) partition, (5) proof, (6) refutation, (7) digression, and (8) conclusion (Benson & Prosser, 1972). Each part performs a unique function. These parts are dynamic because the communicational situation will dictate whether a certain function be present, and how it will be combined with others in order to achieve the desired effect. Kinneavy (1971) contracts the parts of a discourse to five: (1) introduction, (2) background, (3) proof, (4) refutation, and (5) conclusion. "Partition" is implicit in the logical flow of the discourse, and "thesis" is combined with "proof". Corbett (1971) agrees with Kinneavy that these five parts can be found (may be implicit) in the analysis of typical argumentative discourse.

Cicero (Benson & Prosser, 1971) contends that the occurrence and the sequence of these parts—which carry out the functions—depend on (a) the role the speaker takes (e.g., as defendant or accuser), (b) the attitude of the audience (e.g., friendly or not), and (c) the purpose of writing the discourse. For instance, the defendant of an argument taking the floor after the accuser should omit narrating background already stated by the accuser. Also, "if an ambiguous case has a doubtful point for the judge's

decision, the exordium must begin with a discussion of this
very point" (p. 197), which has been successfully refuted by
the opponent. Cicero thus relates invention inseparably to
arrangement (both of which are adjusted to the purpose of
the discourse). Corbett states that, in the Classical view,
arrangement calls for "adjustments that one may have to make
in sequence, proportion, emphasis, and coloring to fit a
particular subject, occasion, purpose, or audience" (p.
299).

Although the functional classification of parts of a
discourse in Classical rhetoric reveals the purpose of
writing, it no longer prevails in modern rhetoric. Mode has
replaced function in traditional English composition
pedagogy. In the nineteenth century Alexander Bain
(Rodgers, 1968) divided writing into five modes: narration,
exposition, description, argumentation, and persuasion.
Except the last (now combined with argumentation), they were
soon recognized by composition teachers as the "structuring
principles" of composition. This division remains standard
even today.

In some general way, mode does affect writing. Emig's
experiment (1977) shows that producing a written discourse
in the argumentative mode demands significantly greater
effort and time, as compared with narrative and descriptive
modes. Matsuhashi (1981) and Flowers and Hayes (1981)
obtain similar results from their experiments. Britton
(1975) finds that the better writers write, the greater the

difference is in their writing across modes. In addition,
Hunt (1965), Britton (1975), Crowhurst (1979), and Yao
(1983), in studying the development of syntactic maturity,
coincide in finding that mode influences T-unit (see
definition, in Chapter Three) length more than age level,
perhaps because older writers are more advanced than younger
writers in controlling syntactic structure and more
conscious of the mode convention. For example, although the
contrast with beginning writers complicates the issue,
Crowhurst (1979) does find that T-unit length in
thirteen-year-olds' writing differs between the narrative
and argumentative modes more than T-unit length differs
between six- and eight-year-olds' writing in the same mode
(e.g., argumentative or narrative).

Discursive discourse has now become more important than
others because it is used in educational assessment, such as
discussion, essay, and term paper. Logic is the principle
for evaluating arguments, and logic, according to Matalene
(1985: 790), denotes connecting premises and conclusions
with inductive or deductive reasoning. Expressive-oriented
functions like narrative and descriptive usually are not
used in assessment, probably because, as Kinneavy (1971)
suggests, there are no typical plans (structures) in
expressive modes. Also, expressive writing is not subject
to standardized objective evaluation. Winterowd (1970) also
argues that formal effect is greater in more "reasonable"
writing. A thesis and its supporting evidence form a

hierarchical structure, which implies a relatively fixed form for validating arguments.

In fact, narrative and descriptive modes can be loaded with values, i.e., be used to demonstrate certain opinions; and when they are, they can be considered suasive (Coe, 1981). This effect can be created either consciously or unconsciously; for instance, the viewpoint taken, or the sequence of the incidents presented, can slant the discourse, and the effect of the discourse on the audience will be slanted accordingly. Even when the writing task is assigned to be in a certain mode, moreover, very seldom will we find a discourse belonging to only one function, taking on only one "mode" (Britton, 1975).

According to Kinneavy, modern rhetoric now stresses mode, which distinguishes various types of writing (e.g., narrative, argument, and so on) rather than the reason for using those types (i.e., functions) of writing. Neglect of the reason stems from neglect of functions. Kinneavy attributes this emphasis to a narrow association of narrative and descriptive modes with literature alone.

Kinneavy (1971) reviews the history of the studies of discourse and reports that rhetoric was first regarded as a discipline separated from linguistics and literature in the nineteenth century. Kinneavy also observes that, "in discourse education, oral dialectical expressive media were exiled in the 1800's, rhetorical media in the 1900's, and literary media in the 1950's" (p. 25). These "exiles",

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Kinneavy argues, are a result of the rise of the "scientific
ethos" in education. The behavioristically oriented
"scientific ethos" has dominated research, as discussed at
the end of Section A, by invalidating all analyses
associated with "unobjective" techniques. Consequently, the
study of discourse was withdrawn from school curriculum,
which by the 1950's took up drilling the structures and the
usages deemed important by its social context, rather than
the traditional aims of discourse training in liberal arts.
Thus mode replaced function in writing pedagogy.

Johnson (1984) observes that moral teaching was
dominant in the nineteenth century, and this observation may
support Kinneavy's assertion about discourse education.
Johnson further observes that the aim of discourse education
switched to cultivation of taste and eloquence around 1910
when literature replaced rhetoric in the public school
curriculum. Thus style, the essence of the "belles lettres"
trend, began to dominate the language arts. Johnson also
points out that, despite the flourishing of
"process-oriented" writing pedagogy in the 1960's, the
emphasis (on style) has not changed; the change was only
methodological. The dominance of style helps explain how
arrangement has long been neglected and why the rather
meager research on arrangement is mostly on literary texts,
which were to represent language uses.

Kinneavy observes that in the 1960's, research in
composition shifted its focus from product-oriented

questions of style to process-oriented "discovery" (or invention, generation). However, many researchers also turned to grammatical structures, e.g., the sentence combining developed by O'Hare (1973) and studies on cohesion, e.g., Halliday and Hasan (1976).

Halliday and Hasan maintain that certain linguistic properties are independent of reference. They call these properties that link "a presupposed item with a presupposing item" cohesive ties. They regard these ties as "what distinguishes it [text] from being something that is not a text" (p. 2), and Carrell (1982) interprets these ties as the "text property that is more commonly referred to as coherence" (p. 480).

Morgan and Sellner (1980) criticize Halliday and Hasan's theory of coherence by pointing out that, first, coherence encompasses "reference relation". This relation is between the linguistic code in the text and the reality outside the text; not between linguistic codes within the text. Second, cohesive ties are not the cause of coherence, but are the consequence of the text's being coherent.

Carrell (1982) supports Morgan and Sellner's point about reference relation by using Rulmelhart's schema theory (1975) to maintain that reading is an interaction between readers' background knowledge and the information in the text. Carrell also cites several empirical studies (Tierney and Mosenthal, 1981, Freedbody and Anderson, 1981, and Steffensen, 1981) that support Morgan and Sellner's second

point, concluding that cohesive ties do not independently enhance reading comprehension; the ties are the consequence of text coherence, and absence of such ties does not seriously damage reading comprehension. Other factors, like vocabulary difficulty and culturally appropriate schema, have greater impact on reading comprehension.

Cohesive ties are surface structures that exist due to text coherence. Not all such ties are required by the semantic information; they are added to clarify meaning. What they show is the link among the referents of propositions in a text.

Winterowd (1972) finds that some writing which does not conform to the cohesive rules actually creates the intended effects on its reader. The examples he chooses are literary, but they are still a considerable challenge to the hypothesis that cohesion and unity separate competent from incompetent writing.

As a consequence of the reign of the scientific ethos and behaviorism, the research trend in both rhetoric and linguistics over the past two decades has been on objective, clearly-bounded elements. For the same reason, modes and cohesive signals in rhetoric, together with sentence structure in linguistics, all emphasize form (what a text is labeled as) and neglect function (why a text is as it is).

The current research in rhetoric has started to be structure-oriented, a remedy for the weaknesses of the previously dominant trend. Emphasis on style and invention

has gradually been balanced by attention to arrangement. While this trend may go to excess, as all its predecessors did, structure very much needs exploration.

D. Arrangement

Goetz and Armbruster (1981) conclude that the lack of
research on text structure is, in part, because structure
and content belong to different departments in rhetoric:
content, to invention; structure, to arrangement.

Arrangement (i.e., discourse structure, dispositio) is
the second department of rhetoric. Despite the scarce
attention arrangement has attracted from researchers, it is
the department most directly associated with logic.
Arrangement includes the selection of whether and where an
idea should be in a discourse.

Although invention, arrangement, and style are
traditionally three distinct departments with distinct
functions, they are closely interrelated, aspects of the
production and interpretation of a discourse.

(i) Form as Process and as Relationship

D'Angelo (1975) analyzes the relation between
arrangement and invention:

> The concept of arrangement is closely
> connected to that of invention.
> Following Aristotle's system, I take
> form to be closely related to the formal
> principle (i.e., one of the causes of a

mode of being) which produces discourse
. . . . The formal principle or process
of invention is therefore implicit in
any discourse. If for example, the
predominant organizational pattern of a
mode of discourse takes the form of a
comparison, then the writer must have
gone through the inventive process of
comparing in order to produce that
pattern.
        First. . . patterns of development
are not only organizational, they are
also topical as well; that is, they are
to be considered dynamic organizational
processes, symbolic manifestations of
underlying mental process, and not
merely conventional, static patterns.
(pp. 56-57)

Rhetoric, according to Richards (1936), "should be

a study of misunderstanding and remedies" (p. 3).

Traditional teaching of composition does emphasize

arrangement, but the description (and prescription) is

too vague to be pedagogically effective. The demand

for unity and coherence in composition does not show

how to produce discourse with "unity and cohesion".

Larson (1977) supports the demand for unity and

cohesion by pointing out that paragraph development is

essentially linear and towards a certain goal. Unity

and cohesion reinforce the development of the paragraph

in a specific direction, thus helping writers exclude

irrelevant information which sidetracks the reader from

the goal. Nevertheless, the demand for unity and

cohesion is still rather vague and does little to show

students how to produce such discourse.

Although in writing classes, the demand for

"thesis and support" provides a guideline (compared

with unity and cohesion), it fails to explain why a

paragraph/discourse lacks depth. This failure, as Coe

(1981) explains, occurs because thesis and support do

not describe more than two levels of generality

("thesis" is one level more general than "support"),

while a paragraph that is considered well-structured

usually has three or four levels of generality.

Richards (1963) and Burke (1962) also emphasize

the importance of arrangement itself. Richards negates

the traditional concept of form as a static and passive

thing that thought "puts on". Burke's detailed

discussion of form includes a definition of form based

on its functions:

(form is) an arousing and fulfillment of
desires . . . one part of (a work) . . .
leads a reader to anticipate another
part, to be gratified by the
sequence.(p. 183)

Examining the dynamic aspect of discourse, Larson,

Richards, and Burke concur in finding that the nature

of form in general is a development, or a process,

which has direction.

Winterowd (1975) defines discourse arrangement

statically, focusing more on literary texts:

(form is) the internal set of consistent
relationships perceived in any stretch

of discourse, whether poem, play, essay,
oration, or whatever.(p. 165)

Larson (1976) comments on this definition as focusing
more "on connections between sentences than on form in
complete pieces of discourse"(p. 46). The scope of the
language Winterowd discusses may be narrow, but the
connections he emphasizes are a key element that build
up a discourse.

Pitkin's "discourse block" model (1969) presents a
hierarchy of functional relations within a discourse.
Despite his remarkable insight into uniting function
with form, there does appear to be certain confusion
between syntactic and logical functions. Pitkin claims
that blocks on the same level are logically connected
in pairs (by one of four kinds of
relationship--coordination, complementation,
subordination, and superordination)--while the blocks
across levels can be syntactically or logically
connected, by what is essentially an embedding
relationship: In the hierarchy, the blocks including
more than one sentence/paragraph are near the top; the
blocks including only part of a sentence are near the
bottom. Each block can be subdivided into smaller
blocks. As Figure 2 shows, the tree diagram of
Chomsky's transformational generative grammar may be
sufficient to cover the lower part of Pitkin's
hierarchy.

Figure 2

Tree Diagram of a Sentence
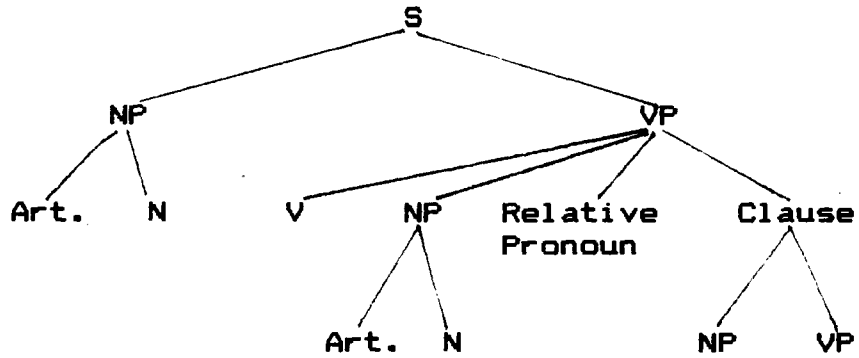
A   girl hit the dog which   Mary bought.

The problems with this model are, first, the
relationships Pitkin sees as comparable: pairs at the
lower level (e.g., noun/verb) and pairs at the higher
level (e.g., question/answer). In other words, Pitkin
equates predication with logical relationships; he sees
structure within a proposition as comparable to the
structure between propositions. Second, although he
specifies the pairs as embedded in greater units, he
does not describe but only implies the semantic
connections among the pairs, which they may form pairs
at a higher level (e.g., the NP and VP in Figure 2).
The co-occurrence rule in linguistics may explain some
of the connections (e.g., between the subject and
predicate obligatorily coexisting in a sentence), but
the rule does not specify the nature of connection, and

this specification is one, among others, of the

purposes of Pitkin's model.

(ii) The Christensen Tradition

Christensen (1965) unifies and systemizes two

aspects of form/arrangement: process and internal

relationships. He also identifies the actual

connections among the constituents of a discourse.

Therefore his research forms a center for the

exploration of arrangement over the past two decades.

Coe et al. (1986) dub Christensen's research, and that

inspired by him, "the Christensen tradition",

operationally unified by:

        classifying sentences (or t-units or
        clauses) according to relative level of
        generality and looking at patterns of
        modification among the items so
        classified. (Coe et al., 1986, p. 2)

A comparable modification pattern across the

sentence boundaries is suggested by many discourse

researchers in their aspiration to discover a formal

principle of discourse (e.g., Winterowd [1975], Grady

[1971], and Pitkin [1969], as discussed above), but no

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one except Christensen systematizes the pattern to such

an extent that the pattern becomes reproducible and

generative. Christensen argues in his "A Generative

Rhetoric of the Sentence" (1963) that a sentence is

cumulated by the modifiers of the base clause through

coordination or subordination, i.e., the base clause

is the most general proposition, and comparisons and

qualification are added to the base clause. In

subsequent work, Christensen (1965) extends the same

cumulative principle to the paragraph. He defines the

paragraph as a "sequence of structurally related

sentences". The structural relationships are still

seen to be coordination or subordination, while the

"base clause" (at the sentence level) is replaced (at

the paragraph level) by a "topic sentence".

a. Features of the paragraph

Christensen not only describes how these

structural relationships are transferable across the

sentence boundary, but also explains the principles of

paragraph construction:

(i) Addition. Paragraph development is an

accumulation of ideas on the topic sentence, which is

the most conclusive statement in a paragraph.

(ii) Modification. A paragraph is cumulated by

adding coordinative and subordinative modifiers to the topic sentence.

(iii) Direction of Movement. The development is aimed at a "base" and "moves" toward what it modifies. The "movement" is a synonym of the the mental process of the reader, the "process" and "development" that Larson (1977) discusses.

(iv) Level of Generality. Coordination or subordination between two connected sentences can be translated into their relative height on this "ladder of levels of generality" (Coe et al., 1986). More general propositions are higher on this "ladder" (For detailed discussion, see Chapter 3, Section E).

(v) Texture. The density of the modification in a discourse. Discourse structure becomes denser with more qualifiers, more details.

Although the principles are insightful, some of their assumptions are challenged by other studies: Braddock (1974) concludes from his empirical analysis that the topic (the most conclusive) sentence very often does not even occur in professional writers' paragraphs; when the topic sentence does occur, it is most often not at the beginning of the paragraph. Consequently there must be relationships other than coordination and subordination so that the most general sentence (occurring near the middle or the end of a paragraph) can be connected to earlier semantically

related sentences. That is why Karrfalt (1966)

comments that Christensen's model only accounts for

vertical development of the paragraph (as the

modification goes into detail down the levels); but the

model neglects "horizontal" development. Karrfalt

suggests that there should be more than two ways to

modify (i.e., subordinaton and coordinaton), since

generalizations (which are neither subordinate to nor

coordinate with the preceding informaton) can be

inferred and developed.

Nold and Davis (1981) credit Karrfalt for his

insight into Christensen's theory and suggest that

"superordination" should be added to the directions of

movement, along with coordination and subordination.

They devise a matrix based on these relationships.

Naturally, if the sequence of the sentences in a

discourse was not considered, there would be only two

possible patterns found: on the same level

(coordination), or on different levels (subordination

and superordination), of generality. However, the

sequence should be accounted for because movement is a

principle of paragraph development. Thus adding

superordination to arrangement rules is necessary.

b. Elaboration in the tradition

Despite its flaws, Christensen's theory presents guidelines which can be applied to explicate discourse patterns. In addition to Christensen's curriculum (1968) employing the notion of level of generality to teaching of writing, Britton (1975) applies some of Christensen's principles of the paragraph in writing pedagogy, Grady (1971) and D'Angelo (1974) extend some of these principles of arrangement beyond the paragraph to the whole piece of writing.

Britton (1975) successfully applies the notion of "levels of generality" with concrete objects in teaching young children about paragraph structure. The children learned to produce well-supported statements (containing no fewer than two levels of generality).

Expanding Christensen's definition of paragraph--a sequence of structurally related sentences--Grady argues that discourse is "a sequence of structurally related paragraphs". The modification pattern applying for sentence also applies for paragraphs and for entire pieces of writing. According to Grady, a sentence is a microscopic paragraph, which is a microscopic discourse. D'Angelo, on the other hand, argues at length that a discourse is "a sequence of structurally related sentences" (one being the topic sentence), connected by subordination, coordination

and superordination.

In his later work, D'Angelo (1975) asserts that discourse pattern is the formal principle that produces discourse. He also concludes that in studying discourse patterns, researchers have a general tendency to extract form from discourses of similar kind, that is, to search for paradigms. This conclusion accords with Corbett's (1971) and Larson's (1971) discussions, although they refer to this paradigm/frame by various terms.

(iii) Relationships as Formal Principles

Richards (1936) considers the more detailed structures which connect propositions in a piece of discourse to be more essential to the formal principle than is the overall pattern (the parts of a discourse, e.g., introduction, thesis, conclusion, and so forth):

> The conception of the study of language is frustratingly distant or macroscopic and yields no return in understanding--either practical or theoretical--unless it is supplemented by an intimate or microscopic inquiry which endeavours to look into the structure of the meanings with which discourse is composed. (p. 9)

Similarly, to Winterowd (1970), form is coherence,

which exists at three levels: case relationships (the semantic function of sentence parts, e.g., agent, location, etc.), syntax (sentence structure, labeled by grammatical categories, e.g., noun, verb), and transition (beyond the sentence). Since "form is the internal set of consistent relationships in any stretch of discourse", the number of the relationships must be finite.

He starts with a set of seven relationships: coordinate, obversative, causative, conclusive, alternative, inclusive, and sequential. Later, he subsumes "sequential" under "coordinate". He also claims that these relationships are not merely for connecting sentences into paragraphs, or paragraphs into essays, or chapters into books; they are also for generation. Unfortunately he never discusses generation in greater detail. Winterowd's set of relationships may be further condensed, for example, on the basis of Christensen's notion of level of generality.

(iv) Constituent Unit

Movement and relationships are the essence of arrangement. Theories in the Christensen tradition reveal that the relationships substantiate structural rules (which may be generative); while the relationships may regulate

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structure by "direction". The concept of movement (development, which may be understood, metaphorically, as the movement of mind following discourse) becomes clearer when linked with invention. But in order to see the movement of relationships, one must apply an appropriate constituent unit because the relationships exist among the units. The notion of constituent unit is vital to the understanding of discourse structures, which are the connections among the units.

Both at the macro and the micro level, discourse structure is perceived as a frame or paradigm, even though the terms used to refer to it are different, such as D'Angelo's "plans of organization" (1974), Larson's "movements of mind" (1971), Rodger's "thought patterns" (1966). And formal principles of discourse govern all these structures at both the macro and micro levels.

One of the main reasons why D'Angelo's theory is more systematic than Grady's is that D'Angelo takes the sentence, not the paragraph, to be the constituent of a discourse. Sentence boundary correlates more closely with semantic information than does paragraph boundary. According to Coe (1981), the paragraph is, strictly speaking, a macro-punctuation mark, which physically isolates a passage with an indentation at its beginning and an often unfilled line at its end. Unity does influence paragraphing, but it only suggests the possibility of paragraphing; it does not determine that any exact spot in a discourse must be a

paragraph boundary. That depends almost entirely on rhetorical context (layout of printing, the expected readers, etc.). For instance, the size of a "graph" in the English language newspaper is cut down to one or two sentences so that it may appear psycholinguistically more readable in the narrow newspaper column. The paragraph in a Chinese newspaper, on the other hand, can be very long, partly because a vertical line can consist of 20 Chinese characters.

Rodgers (1966) proposes the term "stadium" for a series of sentences "containing a single topic, together with any accrete extentions or adjunctive support", i.e., a developed idea. Nold and Davis (1981) attempt an operational definition of "stadium" in their discourse matrix.

The sentence is superior to the paragraph in accounting for such discourse patterns because the sentence boundary is not contingent upon the physical presentation of the discourse or the communicative context (paragraph length depends on, among other factors; genre, audience, and the width of the column). But, the sentence is not the best constituent because the sentence boundary is contingent upon punctuation. Compound propositions can be presented as two sentences with or without a conjunction, or as one sentece linked by a conjunction. A shorter unit, defined grammatically, would be superior.

E. The Grammar of Sentences and a Grammar of Passages

(i) The Need for a Grammar of Passages

Many researchers contend that the modification pattern
of a discourse is comparable to that of a sentence. Some
remedial programs make the analogy explicit as do some
psychologists.

In her eminent study of a basic program for first
language writers, Shaughnessy (1978) asserts that
inefficient writing arises, structurally, from the
incapacity to elaborate ideas: Inefficient writers cannot
develop their thoughts across sentence boundaries, nor can
they move readily between general and specific
statements—sometimes because of their lack of awareness of
the distinction between the two—while meaning resides in
chunks greater than sentences. Therefore,

> The mature writer is recognized not so much by the
> quality of his individual sentences as by his ability
> to relate sentences in such a way as to create a flow
> of sentences, a pattern of thought that is produced,
> one suspects, according to the principles of yet
> another kind of grammar—a grammar, let us say, of
> passages. (p. 226)

In their analysis of oral discourse between
psychotherapists and their patients, Labov and Fanshel
(1977) also find that, in order to fully understand what an

utterance can do, one must first know how one utterance is
connected to another. Thus a "grammar of passages" is
needed for this kind of analysis.

(ii) The Trends of Research

Labov and Fanshel discuss a general approach to
conversation. The approach focuses on "the description of
particular details that seem to have been neglected by
traditional grammarians" (p. 29). First, they analyzed
paralinguistic features (e.g., intonation, pause). Progress
was very limited because there were disagreements about the
"categorization of paralinguistic cues", and the "multiple
ambiguity which these signals show in isolation" (p. 29).
Then their analysis of conversation turned in another
direction. They tackled the "smallest units of
organization" to account for "presuppositions and
implications of sentence structure". These analyses also
had a more general aim: to "work out the possible
combinations of single units, and so proceed gradually to
write a grammar of discourse"(p. 29). Their research
concerned analysis of cohesive signals (as did Halliday and
Hasan, 1979); and analysis of sentence parts (as in Witte,
1983, and Levy, 1979).
Not surprisingly, analyses of the cohesive cues
produced little result because of the same problems that

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obstructed analyses of paralinguistic features: ambiguity
and the consequent difficulties in categorization.
Anaphoric nouns/pronouns and (especially) conjunctions are
ambiguous when isolated; they must be examined in context in
order to be understood precisely.

Undoubtedly language is used for meaning. Thus
analyses of language must involve the discovery of where
meaning resides. Essentially, it resides in the
interpretation; textually, according to Shaughnessy (1978),
it resides in "chunks greater than sentences". Likewise,
Labov and Fanshel end up having to account for an "even
larger body of implicit activities", and "in the form of
unexpressed social and psychological propositions"--a
greater context.

Because Labov and Fanshel are dealing with
conversation, they have to account for many non-linguistic
and interactional aspects which do not have to be considered
within written discourse. In writing, the graphic code is
ideally the sole resource for communication. However, the
importance of context remains in analyses of written
discourse. As Richards (1936) argues, the context for an
individual proposition in the discourse is the network of
relationships among all propositions in the discourse.
Labov and Fanshel regard the conversational structure not as
a "chain", but as a

matrix of utterances and actions bound together by a
web of understandings and reactions. In some ways,
this many-layered structure is quite similar to the
hierarchical organization of a grammar (p. 30).

They decided to use the speech act to analyze

conversation. Speech act theory was developed for analyzing

oral discourse. It has merits in revealing what an

individual utterance does by clarifying how communicative

rules relate to the linguistic code, and/or how the

linguistic code relates to reality (the effects) but not how

one utterance relates to another. Improvement in linking

utterances is still needed.

Searle (1979) ambitiously does claim that speech act

theory is capable of mapping relations between successive

propositions by revealing the act each utterance performs.

Dore (1980) has validated this claim, but only for a very

few structures which are in pairs (e.g., question and

answer), and which are internally connected by what Pitkin

(1969) would call a "complementary relationship".

Problems remain even in these "pairs". For example,

when in analyzing classroom dialogue, Dore (1980) labels

utterances as "requestive" and "responsive", a problem

arises. If a question is embedded in another one, as in the

following utterances:

    (1) A: Are you going to the conference?
    (2) B: Are you going?
    (3) A: I'm not.

(4) B: Nor am I then.

Dore would analyze this passage by labeling (2) "responsive"
and noting "interrogative".   Thus he would miss the sense in
which (2), in fact, "solicits information or action" (Dore's
definition of "requestive").

        To supplement speech act theory with an analysis of
arrangement may very well improve the analysis of oral
discourse, although researchers must first clarify the
differences between spoken and written discourse.

(iii) A Comparison of the Two Grammars

        There is an essential difference between the
traditional grammar (of sentences) and a "grammar" of
passages.   Coe et al. (1986) differentiate the two: a
grammar of sentences can be independent from the semantic
aspect of the sentence, but a grammar of passages cannot
because it inevitably describes the logical relationships
among the semantic propositions represented by the
sentences.

        But the similarities between the two grammars are no
less essential than the differences.   The phrase "a grammar
of passages" is not merely a metaphor, because the two
grammars both delineate the relationships among the

constituents; in other words, they both extract modification

patterns. In terms of delineating relationships, the

distinction between the two grammars is that one kind of

relationship is logical and the other is predicative.

When Christensen parallels the modification pattern of

the sentence with that of the paragraph, predication is not

included. Rather, the modification focuses on the "head

clause", which is always a complete proposition, so the

relationships are based on propositional content.

Viewing grammar from a different perspective, Saussure

(1959) argues that "in a language state everything is based

on relations" (p. 122), and Lockwood (1972) refers to

grammar as a "network of relationships" (p. 26). Levy

explains it further:

> The idea was that any individual linguistic element . .
> . was meaningless independent of its relationship to
> the other elements in its system . . . that its
> identity was based on its participation in a CLOSED
> SYSTEM of elements, each of which was defined in
> relation to the other elements in the system (p. 202).

Witte (1983) devised a powerful instrument in an

attempt to account for coherence in discourse by tracking

the development of the topics of sentences in a discourse.

Although topics correlate closely with meaning, they are not

the propositions building up the meaning of the discourse

because, as Coe et al. (1986) argue,

the "deep structure" of passages is tied to the logical relationships among the propositions its sentences represent in a way that the deep structure of sentences is not. (p. 8)

Rumelhart aims at accounting for the parts of a story at the macro level. He builds his "story grammar" (1975) by chunking incidents in a story into constituent structures. He identifies the "blocs" and implicitly assumes that these blocs are fixed structuring units of a story (see figure 3 for example). Thus he does take the initial step of arrangement analysis—trying to identify the constituents.

Figure 3

Structures in Rumelhart's "Story Grammar"

Story → Setting + Episode
Setting → (State)*
Episode → Event + Reaction
Event → (Episode | Change-of-state | Action | Event + Event)
Reaction → Internal Response + Overt Response
Internal Response → (Emotion | Desire)
Overt Response → (Action | (Attempt)*)
Attempt → Plan + Application
Application → (Preaction)* + Action + Consequence
Preaction → Subgoal + (Attempt)*
Consequence → (Reaction | Event)

(Levy, 1979: 206)

Lockwood (1972) discusses a similar labeling system in

stratificational grammar. This discussion may provide

insight into problems with identification of individual

structures in a discourse:

In the stratificational system of relationships . . .
these labels (of linguistic entities) are simply added
at various points in the total network of relationships
as reference points to aid the linguist in discussing
this system. When all necessary relationships are
properly represented, the internal language will be
resolved into these relationships, as only they have a
status in the theory . . . Labels placed within such a
system make no contribution to its content, but they do
contribute to its readability, and this is their
primary justification. (p. 26)

From a similar point of view, Levy (1979) criticizes

text grammar (see Van Dijk, 1972) as "intended only as

descriptive or classificatory aids" (p. 207). Levy

criticizes all the labeling grammars (e.g., story grammar

and text grammar) and proposes that the "process", or the

"flow of thought" is more essential to the structure of a

discourse than the chunks of content. He devises a model

based on the notion of "communicational goals". An example

of such representation is in Figure 4:

Figure 4

Levy's "Communicative Goal" Model
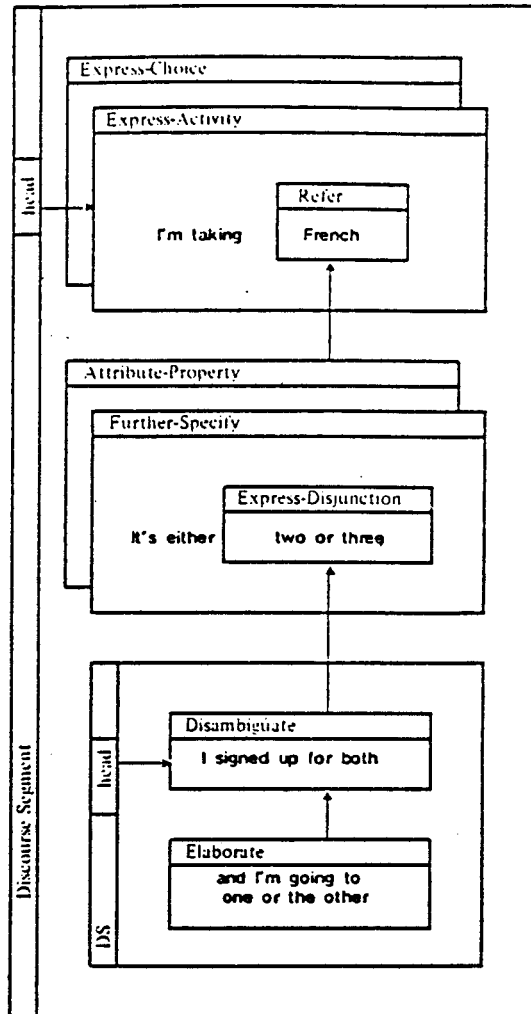
(Levy, 1979: 188)

The model is very similar to Christensen's (1965) because (1) it identifies the "head" of a discourse and the "discourse segment" (similar to Christensen's "modifiers") that leads to the "head", and (2) it emphasizes the vertical

aspect of discourse (i.e., only the adding of "depths" are represented).

Three major differences between Levy's and Christensen's models are:

(1) Levy's model is visually more revealing than Christensen's in showing the layers of modification in a passage (at the expense of its even more cumbersome diagramming). As Levy diagrams only very short passages, however, it is not clear how an entire discourse can be diagrammed in the same fashion because the "goals" are more complex in the larger context.

(2) Levy's model does not always reflect the original sequence of the propositions encoded in sentences; but Christensen's does.

(3) The kind of relationships connecting the propositions in a discourse is the most important point that Christensen captures while Levy misses. The visual figure in Levy's model implies only subordination. Even though Levy repeatedly emphasizes relationships in his discussion, he discovers no principle that governs the relationships.

(iv) Sentence and Discourse Structure in Chinese and English

In "Beyond Style" (1972), Winterowd draws an analogy between grammar of the sentence and grammar beyond the sentence. This analogy is an inference made from his own assertion (1975, first published in 1971) that in order to understand form, it is necessary to inspect the connections between the deep structure of an utterance and the various available surface structures which may realize the deep structure. Similarities become more salient when one explores the connection between arrangement and style.

But sentence structure varies from language to language, as can be made clear by differences in punctuation. In Chinese, modern punctuation was not used until 1920 or so. Very few ancient Chinese texts were punctuated. If they were, it was in a fashion different from that of most modern texts. One of the common places for pause (signaled by a comma) within a Chinese sentence is after nouns, especially subjects of sentences, for example:

大學之道，在明明德，在親民，在止於至善。

(Confucius, <u>Luen-Yu</u> 論語, 1966)

(The way to the supreme learning, is in the elaboration of the illuminated virtues, in being considerate to fellow human beings, and in stopping only after reaching the perfect.)

Hakuta's (1977) explanation for this kind of punctuation is that Chinese is a topic-centered language

while English is a subject-centered language. The Chinese

sentence is formed around the focus of the proposition, with

the topic dangling outside the subject slot. For example,

in the sentence

Neike   shu   yezi   da
that   tree   leaves big
"That tree (topic), the leaves are big."

we find an introduction of the topic (i.e., the tree)

preceeding the predication of largeness to the tree's

leaves. Another explanation, based on transformational

grammar, given by Tang (1974), is that Chinese is a

"left-branching" (on the tree diagram) language, in which

the modifier(s) of a noun phrase always precede the

modified, as opposed to English (and most European

languages), which is a "right-branching" language, in which

the noun phrase usually precedes its modifier(s) when the

modifier is long (in the form of either phrase or clause,

which often starts with a relative pronoun, that may be

ellipted, e.g., which, what).

The punctuation mark that separates a Chinese noun

phrase from its preceding modifier(s) serves a function

similar to that of the punctuation mark that separates the

non-restrictive modifier(s) in English, for example:

The forest fire, which destroyed two thousand acres

of forest in British Columbia and lasted for a week, was

assessed to have cost $2 million.

Without the commas, the underlined part would be two
restrictive clauses. But in Chinese punctuation alone
cannot distinguish a restrictive clause from a
non-restrictive one; the noun must be repeated and preceded
by an indicative pronoun (e.g., this, that) in order to
achieve the effect of restrictive reference.

In translation, the different modification patterns
between Chinese and English become more striking. Fang
(1984) reports that the major difficulties of recreating the
focus of an originally English-written news story in its
Chinese translation are in handling the "up-side-down
pyramid" modification pattern in English (the modifiers that
add details following the modified). Take the following
sentence as an example:

> A fire of accidental origin caused $78,000 in damage to
> a dwelling at 25 New York Street today.
>   No one was injured in the blaze [which was]
> started by an overturned kerosene lamp in the basement
> when the 11 year old son of the owners, [who were] Mr.
> and Mrs. Robert Smith, was alone there looking for his
> father's carpenter's tools.
>   (Ming-Pao Monthly, Apr. 1984, p. 8)

The text starts with the focus of the report, the fire, and
its consequences follows immediately. The consequences are
regarded as more important than the cause of the fire. What
started the fire and whose house the fire damaged are
embedded in the relative clauses modifying the noun phrases:

"the blaze" and "the owners".

In Chinese the only way to retain the emphasis of the original English version is to pile the entire modifying clause before the noun phrase being modified. Obviously, the sentence will be hard to read. The linguistic system simply does not accommodate such imbalance because it is structured in another way.

A preferrable way to handle this sentence in Chinese, as Fang suggests, is to rearrange connections among the clauses to suit the syntactic demands in Chinese. One would need to use demonstrative pronouns (e.g., this, that) and change the sequence of clauses, though one thus changes the focus of the report.

To translate between languages having different culturally typical rhetorical patterns is often difficult, partly because it is hard to re-present the same meaning and effect with appropriate syntactic structure. If translators wish to produce a fluent translation, they often face the dilemma of stretching or even violating syntactic rules, or changing the arrangement (thus changing the focus and effect) of the original text.

Kaplan (1965) gives several examples of such translation problems which occur when ESL students write English compositions. The students transfer the thought pattern and the syntactic pattern in their native language into their English writing; consequently, their writing "stands in the way of clear communicaion" (p. 8).

Kaplan comments on the writing of an Arabic-speaking ESL student: "while this extensive parallel construction [which is characteristic in the Semitic language] is linguistically possible in Arabic, the English language lacks the necessary flexibility" (p. 9).

Thus syntactic structure in part determines the modification pattern in a discourse. Researchers in writing pedagogy (in both the native and second languages), as well as those analyzing oral discourse (for psychotherapy and teacher-student interaction) need a "grammar of passages" in order to improve their understanding of discourse. However, research trends have had a different focus--on the constituents, rather than on the formal principle (which on the discourse level is the logical, not the predicative, relationships combining the constituents).

F. Frames

Form incites expectation, by arousing and fulfilling

desires, according to Burke (1968); thus form regulates

information generation and information processing. There

are various types of form and their different orientations

result in minor variation, but the two key concepts of form

are "categorization" and "stereotype"; either form is for

unintentional perception (as schema emphasizes) or for

conscious interpretation (as terministic screen emphasizes).

Vygotsky (1962) argues that categorization, which

organizes items into patterns according to the relationships

among the items, is the basis for concept formation. In

accord with Vygotsky, Kepes (1965) concludes that the role

of categorization in human perception and consciousness is

equally important:

> Studies of our perceptual and cognition process by
> Gestalt psychologists show that psychological events do
> not occur through the accumulation of individual
> elements of sensory perception, but through the
> coordinated functioning of clearly patterned networks
> of sensation determined by structural laws.(p. iv)

According to Brown (1978), after the patterns are

formed, they are modified by related experiences accumulated

through time; as a result, a stereotype is formed.
Stereotypes play an important role in information production
and processing by functioning as a base on which to organize
outgoing information, and against which to compare incoming
information thus to recognize and assign meaning to
information.

Frames restrain: when the stereotype is fulfilled,
closure arises, shutting out extra information; or, when the
stereotype is not fulfilled, incoming information may be
rejected. Misunderstandings often arise when information is
forced into the moulding stereotype.

(i) Factual Frame

The concept of stereotype/frame may be based on the
co-occurrence of information, as Kintsch's "formal
frames"(1978), which is a network combining slots,
resembling the cases in case grammar, plus causal
relationships (e.g., a frame for the concept of "war"
consists of slots for the agent, cause, result, and others).
This is a model representative of general concepts.

Morton (1974) explains reading comprehension with the
construct "logogen", the cluster of the semantic and
phonological information of a word, including attributes
associated with the word accumulated from experiences. When
any of these pieces of information receive attention, the
entire cluster of information is instantiated.

(ii) Contextual Frames

Goffman (1980) identifies several types of constraints
on the structure of conversation, including social
principles and frameworks for information processsing. A
stereotype is embodied in what he calls "ritual
constraints", which exist outside the code, in the setting.

Another contextual frame is Fishman's "domain" (1971),
which is the setting that demands a particular register
(e.g., formal and informal languages) or even a particular
language (for speakers of more than one language). The
roles the speaker plays in the social interaction and the
behaviors that are culturally typical may determine switch
of language/register.

(iii) Cognitive Frames

Rumelhart (1980) systemizes the anecdotal notion of
"habits" with his schema theory. The term "schema" was
traced back to its earliest user, Kant (1787, 1963).
Following Oxford English Dictionary, Rumelhart defines
schema as:

Any one of certain forms of rules of the "productive

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imagination" through which the understanding is able to apply its "categories" to the meanifold of sense-perception in the process of realizing knowledge or experience. (Rumelhart, 1980, p. 33)

Schema theory is outstanding because it applies widely, its formation and functions are described in detail, and--the most important point for this study--schema can be modified.

Schema, according to Rumelhart's explanation, are packages of knowledge representation governing--with defaults and constraints--the processing of information (including interpreting incoming sensory data, retrieving information, allocating resources, and organizing actions).

A schemata may evolve or be tuned in three different ways: (1) substituting new variables for the old, (2) relaxing the variable constraints, and (3) tightening up the variable constraints. The premise of this tuning is that the schema can adequately account for the situation. Changes will be very slow if the variables in the situation deviate widely from the established constraints.

Therefore, to overtly bring up the similarities and discrepancies of the discourse structures involved in second language learning, then to substitute target arrangement pattern for the stereotyped ones in the native language may efficiently accelerate the learner's mastery of the target

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language.

Three studies in reading examplify the functioning of schemata. According to Goodman's "top-down" theory (1972), reading is a "psycholinguistic" guessing game"; readers comprehend texts by picking up text information matching their expectations. Goetz and Armbruster (1980) find that well-structured discourses or the ones more congruent with the reader's knowledge and expectations are easier to learn and remember. Collins, Brown, and Larkin's experiment (1980) shows that the key to text comprehension is the ability to ask the "right" questions in order to be on the right track because the "right" information will thereby be instantiated.

Schema theory is applicable to areas other than linguistic systems, while Burke's "terministic screen" (1965) is applied specifically to form in "literary works" (by which Burke refers to all written or spoken discourse). Formal stereotypes are organized into various "categories" (resembling schemata) which instantiate specific expectations. Information is fully processed only when categorical expectation is gratified. "Terministic screens" function to arouse and fulfill desires.

Categorization and stereotype structure various frames for the production and processing of information because structure substantiates perception, from which conceptualization begins.

G.   Cognition, Socialization, and Communication

Cognition, socialization, and communication influence

perceptual and conceptual structures. Shaughnessy (1978),

for example, concludes that the major cause for the

ineffective writing of "basic writers" resides in the

different conceptualization in elaborating ideas; these

writers do not conceptualize the movement (in writing)

between the general and the specific ideas. She further

comments that conceptualization is rooted in the cultural

background because acquiring the command of a certain way of

thinking is a process of socialization.   A similar

explanation is given by Labov (1976) in his analysis of

American Black English: conceptualization involves cultural

(in this case, subcultural) factors, consequently takes

different forms in different cultures.

Bernstein (1971) and Piaget (1923, cited in Vygotsky,

1962) obtain consistent empirical findings about the

interrelationships among language, thought, and

socialization.   Habermas' (1976) and Vygotsky's (1962)

theories support such findings. Both Bernstein and Habermas

attribute the interrelationship ultimately to the production

system, a Marxist view. Piaget and Vygotsky focus on

children's language development. Despite the different

methods and foci, these four theorists and researchers

concur that, in studying language, the context of language

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performance should receive special consideration.

(i) Language and Socialization in Development

Piaget shows that the language development of children reflects socialization, a progression from an initial egocentric view towards a stage of objectification and logical thinking because, as Vygotsky also asserts, language is the social means of thought (1962, p. 51).

In accounting for the relationship between language and thought, Vygotsky draws from Piaget's findings and argues that the close relationship can best be explained by their development, which is "a product of the development of human consciousness" (p. 119).

Modifying from Piaget's model, in which instruction should match the stage of cognitive maturation, Vygotsky contends that instruction should instead actively lead the student to the next accessible "zone of proximal development". Recognizing the higher zone, students structurally reorganize their cognitive strategies, and eventually acquire the "reflective awareness and deliberate control" which characterize higher cognitive functions. To write with clear, logical, and hierarchical connections is one of these higher cognitive functions. Effective writing

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instruction should provide a "zone of proximal development" for mature writing.

Piaget and Vygotsky's theories, though different in lesser ways, are both opposed to Chomsky's language acquisition device (LAD) theory. Chomsky maintains that by the age of five children have developed full competence in their native language because language development is innately programed; thus the environment may be exempted in language development. This assertion is shaken by some unusual cases in which language development has been impaired when linguistic communication either ceased at some point or was completely absent.

Although Vygotsky refers a great deal to human perception and explores the structural aspects of perception, he differentiates the structural rules of perception from those of thought, thereby clarifying the thesis of the Gestalt psychologists' emphasis on structure. Vygotsky maintains that "thought of a higher level is governed by the relations of generality between concepts--a system of relations" (p. 51), as opposed to the association of co-occurrence rule emphasized in Gestalt psychologists' argument. Vygotsky's contention prefigures Shaughnessy's statement about the movement in competent writing between levels of generality.

Vygosky's account of cognitive activity backs up Shaughnessy's other argument that writing is conceptualization:

concept formation is a movement of thought within the pyramid of concepts, constantly altering between two directions, from particular to the general and vice versa. (p. 80)

Vygotsky also antipates the structure of Christensen's principles of discourse (1965) and the essence of Nold and Davis' matrix (1980):

. . .a concept can become subject to consciousness and deliberate control only when it is a part of a system. If consciousness means generalization, generalization in turn means the formation of a superordinate concept that includes the given concept as a particular case. A superordinate concept implies the existence of a series of subordinate concepts, and it also presupposes a hierarchy of concepts of different levels of generality. Thus the given concept is placed within a system of relationships of generality. (p. 92)

Vygotsky also maintains that this system does not apply only in the native language. When it is established within a certain frame, this "system of meaning" can be transferred to the new language.

(ii) The Results of the Merge

of Language Development and Socialization

Bernstein reports that children of lower social economic status (SES) tend to use, in their speech, a "restricted code" characterized by lack of anaphoric nouns/pronouns (that refer to the objects or events occurring in the preceding text) and qualifiers; and children from higher SES tend to use, in their speech, an "elaborated code" characterized by more precise references and richer qualifiers. Bernstein attributes the characteristics of these two kinds of codes to the "basic categories of thought" derived from social relations, particularly relations of production.

Bernstein theorizes that holders of economic capital, who dominate the production system (which in the twentieth century is highly stratified so that writing, to be functional within such a system, needs to be specialized and hence extremely precise), are at the same time holders of cultural capital, with which they enshrine particular communicative conventions that gratify their needs in production and reinforce the existing production system. Coe (in press) speculates on the types and style of writing demanded by the workforce, and this speculation elaborates Bernstein's contention. Coe observes that the centralized power of decision making in the society dictates that reports should be precise and generalized so they can be concentrated as they are forwarded level by level up to the final decision maker.

In his longitudinal study of first language acquisition, Loban (1976) argues that language performance correlates with SES. The criteria of the assessment reflect the communicative conventions characteristic of the higher SES group. Also, Ohmann (1976) argues that the freshman composition course at Harvard University aims, in part, to develop the students' adaptation of the social roles designated to them by the in-power group.

A study by Luke et al. (1983) suggests that linguistic interpretation reflects the ideology formed in the process of socialization because not only the reader's background knowledge but the context of reading determine meaning. In refuting Olson's (1980) argument that the authority of school texts is established upon the text's intrinsic linguistic features, Luke et al. propose that the "institutional context" of the school (i.e., the social roles and relationships of the teacher, student, and text) plays an important part in how the texts are to be interpreted. Fish (1981), similarly, maintains that

> the reader's experience of the text is contingent on strategies learned from an "interpretive community". The claim here is that no text is unsituated: that the text is "rewritten with each reading" (p. 8).

Luke et al. find Fish's (1981) argument supportive, although they feel it is "perhaps extreme".

Analyzing Chinese and English paragraph structure in my

pilot study, I hypothesized that Chinese argumentation tends

to be didactic because essay writing, as other liberal arts

in Ancient China, is traditionally a means of moral

education.   The didactic function makes the writer repeat

the thesis (which is an urge for a particular responses)

with the aid of various comparisons (similes, metaphors,

allegories) because the indirectness of comparisons

lubricates the bluntness of teaching so that the audience is

more likely to act according to the urging.   According to

this hypothesis, the fixed responsibilities of the didactic

speakers and their audience are respectively to teach and to

obey; thus ethical and logical appeals in Aristotle's sense

(i.e., to claim the right and to rationalize in asserting a

point) are quite unnecessary in this context.   This type of

didactic function is in accordance with Matalene's

conclusion (1985) that the function of Chinese rhetoric is

mainly to "preserve the general harmony and to promote

social cohesion" (p.795)

(iii) The Principles of Discourse

Habermas (1976) proposes a system to account for

communication in general--the "universal pragmatics"--in

which several validity claims are asserted to be "raised and

justified" reciprocally during communication as

presuppositions.

> In accepting a validity claim rased by the speaker, the
> hearer acknowledges the validity of symbolic structure;
> that is, he acknowledges that a sentence is
> grammatical, a statement true, an intentional
> expression truthful, or an utterance correct. . . .
> They satisfy certain adequacy conditions; the garantee
> that intersubjective recognition can be brought about
> under suitable conditions. (pp 4-5)

Of Habermas' two formal presuppositions, one is about the

mechanical structure (grammar) of the code, and the other is

about how the code relates to the communicational context

(under suitable conditions). Norms are crucial because

communication is based on thoughts in common. Formal norms

are no less essential than referential norms; nor are the

contextual norms less essential than structural norms (i.e.,

grammar in the traditional sense). A "grammar of passages",

that varies from one society or culture to another, would

duly be subsumed under the contextual norm.

From the linguistic standpoint, Levy (1979) claims that

discourse should be viewed as

> the convergence or intersection of four kinds of
> 'structure'":
> 1. the structure of the ideas expressed in the text
> 2. the structure of the speaker's thought process
> 3. the structures of the speaker's language
> 4. the structure of the speech situation (the relations
> between speaker and hearer). (p. 208)

The first two kinds of structure are the logical

structure of the discourse viewed from two bases: the first

from the code; the second, from the encoder. The difference

between the "linear" development of the discourse and the

"hierarchical" structure of idea units may by explained by

these two different perspectives of form.

The text consists of ideas which are linked one after

another towards the aim of the discourse. The links enhance

the coherence, and unity helps prevent the development from

going astray.

From the psycholinguistic point of view, a reader

reconstructs the ideas taken from the text into a

hierarchical pattern, woven by the relationships among the

ideas. The pattern makes comprehension possible just as

pattern turns fragments of ideas into concepts.

Textual and psycholinguistic views of discourse

structure endorse two views (discussed in Section D) that

rhetoricians envisage in arrangement. Textually, discourse

is linear, moving in a fixed direction.

Psycholinguistically, the reader's mind "moves" among ideas

in an essentially hierarchical pattern.

For Levy, the decoder seems to have only the passive,

receptive role in processing discourse, but this assertion

contradicts the psycholinguisitic aspect of communication.

Both Habermas and Levy recognize the importance of

grammatical and contextual structure of the speaker's

language; Habermas' claim of "normative correctness",

however, is broader, including the appropriatenesss of

discourse content in relation to the context.

There is similar social implication in these two norms--grammatical and contextual constraints. Coe (in progress) maintains that grammatical drills "have a clear function in the hidden curriculum of socialization" because grammar standardizes the symbolic network in such a way that the network reinforces the established social system. Coe cites Kinneavy's (1979) claim as a support: "isolated teaching of grammatical skills has little or no transfer to use in actual writing". O'Hare (1971) and Wilkinson (1971) come to similar conclusions.

The "rightness" of an utterance, according to Habermas, rises from a "mutually recognized normative background" (p. 3). This statement is in part a proposition that the sociocultural context of the discourse influences the "structure of ideas" because the normative context determines whether a statement is acceptable or not. The structure of ideas in written discourse (i.e., the arrangement) is likely determined by such normative context.

Although the two structures are interrelated, I distinguish perceptual structures (sequentially linear) from conceptual ones (hierarchical). Researchers try to explain how environment influences conceptualization and the communicative norms. Some approach the problem from economic structure, others from the development of human consciousness and language. Discussion then focuses in on the principles of communication in both communicative and

linguistic contexts. But the latter is narrower than the former because it analyzes mainly the constituent entities (words, sentences) and does not include premises of the discourse, as Habermas did.

H. Summary

This literature review has encompassed various disciplines in order to determine structural principles of discourse production and to rationalize an approach to the practical problems encountered in second language learning. The review began with the two conventional, linguistically-based strategies for dealing with learner errors in second language: contrastive analysis and error analysis. The review then moved on to contrastive rhetoric, because rhetoric is more useful than linguistics in accounting for the textual structures above the sentence level and for the context of the communication. However, the theoretical background of langage transfer remains applicable at the rhetorical level.

A historical review followed, accounting for the current research conventions in writing, and their flaws (especially the problematic distinction between invention and arrangement in rhetoric). Principles of arrangement were summarized, under in partibular form some promising research in the "Christensen tradition" and the appropriate constituent unit was considered. These principles of arrangement matter practically because various remedial programs demand a "grammar of passages".

The metaphoric use of the word "grammar" was justified by structural parallels between the modification pattern of

the sentence and that of discourse.   In the end, a "grammar

of passages" was located as a frame for processing

information and influenced by communication, cognition, and

socialization.

CHAPTER THREE

METHODOLOGY

A. Pilot Study

To test the instrument and the analytical procedures, a
pilot study was completed before the main research began.
Using the discourse matrix originally developed by Nold and
Davis (1980) and modified by Coe et al. (1986), the pilot
examined paragraph structure in Chinese and English writing.

(i) Data Source and Data Cells

The sample consisted of Chinese and English academic
journal articles written about the philosophy traditional in
the respective languages. This choice was to collect data
representing Chinese and English writing conventions
respectively. The facts that the subject matter of these
articles was traditional philosophy and that they were
published in academic journal helped control the sample.

(ii) Variables and Coding

I sampled three groups (ten in each) of articles: articles in Chinese by native speakers of Chinese on Chiese philosophy, in English by native speakers of English on Western philosophy, and in English by native speakers of Chinese on Chinese philosophy (The label "native speakers" described the language proficiency level of the writers). Three randomly selected paragraphs of each article were first divided into T-units, then matrixed by the writer of this thesis alone.

Level of generality and node pair (for definitions, see Section E) were the two dependent variables, and language was the only independent variable investigated.

(iii) Findings

Despite the conciseness of the Chinese language, the Chinese paragraphs contained more T-units than those in the English native speaker group (the Chinese averaged 13.3 T-units; the English, 7.5), and 23% of the paragraphs in the Chinese native speaker group were longer than the longest paragraph in the English native speaker group. The Chinese paragraphs also had more levels of generality, more subtopics and stadia, and more node strings than the ones in the English native speaker group. The English paragraphs written by Chinese often compromised between the two native speaker groups: in paragraph length, number of levels of generality, and number of node strings.

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The highest level of generality occurred in different locations in the Chinese and English paragraphs. In the English native speaker group, the highest level was reached at the beginning (as a topic sentence) and/or the end (as a conclusion) while in the Chinese native speaker group it was near the middle or the end of a paragraph (as a topic sentence).

I did not apply statistical confirmation because the pilot was mainly to test the methodology, which was further modified after I had completed the pilot.

(iv) Problem Areas

a. Data Source

Although I controlled the quality and the content of the writing, the findings of this sample could apply to only a specific kind of writing because of the specialized nature of academic philosophy journals.

Furthermore, since I analyzed only three paragraphs of each of the thirty articles and the Chinese articles were much longer than the English ones, the samples might not have been comparable between the two languages, e.g., the beginnings (or even just part of them) of the Chinese articles being compared with the beginning plus the middle of the English ones. Therefore, the results might not reflect the true differences (if any) in arrangement pattern

between the two languages.

b. Coding

The analytical unit was also problematic. The T-unit
was found too crude for isolating propositions when two
drastically different (in every linguistic aspect; syntax,
morphology, etc.) languages were compared. Since the matrix
reflects the interpretation of the reader, the coding could
easily have been biased because it was done by the
experimenter. The reliability of the instrument and the
coding process required examination.

c. Dependent Variables

The pilot was done while Coe et al. were still
modifying the matrix. The variable "Node Pair" used in the
pilot was later improved and relabelled "node string", a
more accurate variable for recording coordinated
subdivisions of an idea.

One of the major differences between Nold and Davis'
original matrix and the modified one used in both the pilot
and the main research is that the original diagrams only the
sequence and the levels of the propositions in the discourse
while the modified matrix also diagrams other semantic
connections. In other words, the original reveals the
text-based order; the modified matrix reveals a
reader-based, psycholinguistic account of meaning

(hierarchical structure).

The term "node pair" is a product of text-based interpretation in which lines connect only consecutive propositions. A node pair is formed by two propositions at the same level of generality without any superordinaton between them, with or without a line connecting the two propositions (i.e., the two do not have to occur next to each other in the text). A node string, on the other hand, is formed by coordinated propositions (repetition excluded). The relationships shown in a node string are the semantic connections among propositions. The connections (indicated by lines) do not necessarily involve the order in which propositions are presented in the discourse, as the original matrix does.

The pilot also showed that the two dependent variables (level of generality and node pair) covered only the text structure in general; the more detailed structure was not revealed.

All these problems were resolved in the present study, which is discussed below.

B. SAMPLING

(i) Data Source

In order to apply the results of analyses to the focus
of the present study--argumentative writing--I switched the
sample to newspaper editorials. Newspapers are very
accessible; at the same time, they are authentic because the
writing employs highly acceptable mode of communication in
the society.

Language was not the sole independent variable here.
In collecting the Chinese data, I found that newspaper
editorials published in the People's Republic of China were
very different in idea arrangement and even in syntactic
structure from those published in the Republic of China.
The literature review indicates that social background
influences discourse structure, so another hypothesis arose:
argumentative discourse structure differs between communist
and capitalist writing. Thus both communist and capitalist
newspapers were selected. As political stance is a very
complicated factor (which has bearings from its social,
cultural, and econonomic bases), this dependent variable
needs clarification, which is provided in Section C, Chapter
Five.

(ii) Data Selection

Statistical analyses were used in this study, and in most cases, random samples statistically have the best chance in reflecting the true universe. However, I selected newspaper editorials not to represent editorial writing, but to represent the kind of argumentative arrangement required for successful communication in the society (hence in post-secondary education) which consumes the editorials. So I selected the most authentic newspapers and/or the ones with the greatest circulation. In other words, the kind of writing examined here is the one most socially acceptable, the one that embodies the ideology of the dominating group (either the economic or academic power—the literature review, at any event, shows that the former tends to influence the latter). Thus although the readership is still limited to a certain group of people (i.e., not everyone would choose to read these newspapers) the data were appropriate for this study.

To balance the personal idiosyncracies of any one newspaper's editors, I chose two newspapers in each of the four categories (Chinese communist, Chinese capitalist, English communist, and English capitalist).

Thus the selection of newspapers was not random but representative. However, the purpose of independent sampling (one of the assumptions of statistic analyses) was achieved because the purpose is to ensure that the data truly represent the universe.

Both the publishing date and the topic of the
editorials were controlled. The period was between
September 1, 1982 and May 30, 1983. The topic was domestic
economy, a subject on which the writers were likely to be
more independent from foreign language training than writers
on topics like nuclear war and world peace.

Thus there are four cells divided by two main
independent variables, language and political stance, with
two newspapers in each cell. Forty editorials were chosen
from eight daily newspapers, five from each. See figure 1.

Figure 5

The Data Cells

	Chinese	English
Communist	Ren-Min	Canadian Tribune
	Guang-Ming	Guardian (New York)
Capitalist	Lien-Heh	Globe & Mail
	Chung-Yang	The New York Times

C. THE ANALYTICAL UNIT

(i) The T-unit

T-unit, the minimal terminable unit, is a linguistic
structure that contains a main clause plus all the
subordinative clauses and/or phrases. Hunt (1965) developed
the concept for examining the syntactic maturity of first
language learners. It is an elegant unit for examining the
number and length of syntactic elements used in a passage.
However, it does not describe the permutation of parts of
ideas within the unit (the sequence in which the parts of
ideas are presented), and this permutation may well be
characteristic of a particular language system or function.
In other words, the permutation is arrangement at the micro
level, i.e., within sentences (and within T-units).

By indicating the quantity and variety of the syntactic
structures in a discourse, the T-unit is an accurate
indicator of group language development and a valid tool for
comparing different writing modes (e.g., narrative,
argumentative) in a single language, as the literature
review indicates. But the T-unit may not be appropriate for
investigating discourse arrangement, particularly when
contrasting vastly different languages.

Actually, the T-unit has its intrinsic flaws. As
Goffman (1974) points out, the distinction between complex
and compound sentence structures is semantically ambiguous,

thus to determine the boundaries of a unit based on this
distinction is potentially problematic. For the purpose of
this study, moreover, the T-unit is inappropriate because it
often contains propositions of more than one level of
generality, thus complicating the decision about how to
locate the T-unit (representing several propositions) in a
suitable position on the matrix.

(ii) The clause

        The clause is a natural and universal linguistic unit.
Lu (1954) concludes that the clause is better for analyzing
Chinese than is the sentence (which he assumes to present a
complete idea) because of the nature of Chinese syntax.
Since Lu's sentence and Hunt's T-unit refer to a similar
structure, I take it that the clause is more appropriate
than the T-unit for analyzing Chinese, especially when
contrasting Chinese with vastly different languages. The
clause, moreover, has the tightest boundaries (compared to
those of sentence and T-unit) for isolating propositions.
        The clause is defined in many different ways by
different grammarians. "Clause" is defined here as a
grammatical unit containing all the components of a complete
logical proposition: in semantics, an understood topic slot
plus a comment slot; in syntax, the subject (possibly
ellipted) slot and the obligatory finite predicate slot, as
well as any optional phrasal modifiers. However, units

beginning with a relative pronoun and containing all the
above components were taken as separate clauses only when
appositive (e.g., clause (2) in the following example b).
Infinitivals (e.g., "To err" in "To err is human"), which
sometimes are taken as clauses with omitted subjects, are
here taken as phrases.

The following four examples show how I counted clauses.
I use slashes ("/") here to isolate clauses.

    a. He said that he was mad. (one clause)

    b. /(1) How to extend the application of the "JPC"
    system, /(2) which is usually referred to as the "Big
    Contract", from farm land to prairies and
    mountains,/(1) thereby bringing further prosperity to
    the economy of villages is a problem to be solved (2
    clauses) Ren-Ming

    c. /(1) We should start from the practical problems,
    /(2) hold on to the principles of the JPC system, /(3)
    apply them in flexible ways. (3 clauses) Ren-Ming

    d. It was equal to 12.7% of the workforce, the highest .
    rate since the deep depression of the 30's, and 55%
    higher than a year ago. (1 clause) Canadian Tribune

I recognize that some linguists, such as Ellegard
(1978) and Quirk et al. (1972), would contend that this
definition is too crude. They take many phrases as clauses
with deleted subjects. But the purpose here is to isolate
propositions based on an objective boundary setting rule,
ambiguity-free and consistent across the two languages at
issue. The clause, as defined, attends to these concerns
better then any other available unit.

D. VARIABLES

There are three independent variables in this analysis:
language and political stance are the two major ones, and
newspaper idiosyncracy (structure that makes these
newspapers differ from one another) is--to account for
variables excluded from the multivariate analysis--a minor
one.   There are three groups of dependent variables
(totalling twelve) across two levels.   See Table 1.

Table 1
The Dependent Variables

Group Name	Short Name (if any)	Full Name	Formula for Calculation
macro level			
straight count		number of clauses	straight count
		number of paragraphs	straight count
		levels of generality	straight count
		number of node strings	straight count
		number of idea strings	straight count
macro level			
ratio	Rgen	level of generality ratio	$\dfrac{\text{levels of generality}}{\text{number of clauses}}$
	Rns	node string ratio	$\dfrac{\text{number of node strings}}{\text{number of clauses}}$
	Ris	idea string ratio	$\dfrac{\text{number of idea strings}}{\text{number of clauses}}$
micro level			
average value	AsubtopN	average subtopics in node strings	$\dfrac{\text{subtopics in node strings}}{\text{number of node strings}}$

AsubclaN	average subordinate clauses in node strings	$$\dfrac{\text{subordinate clauses in node strings}}{\text{number of node strings}}$$
AgenI	average levels of generality in idea strings	$$\dfrac{\text{level of generality of idea strings}}{\text{number of idea strings}}$$
AclaI	average clauses in idea strings	$$\dfrac{\text{clauses idea strings}}{\text{number of idea strings}}$$

==

In the straight count group, clause and paragraph respectively account for the length of text and text division. Level of generality accounts for the range of discourse development. Sum of node strings accounts for the coordination pattern at the macro level. Sum of idea strings accounts for the development of ideas. (See Appendix for an example.)

In the ratio group, the influence of the length of discourse is cancelled out, by dividing levels of generality, sum of node strings, and sum of idea strings respectively by sum of clauses. For example (see Appendix), the Rgen of a Ren-Ming editorial (Mar. 23, 1983) is—levels of generality (9 in this case) over sum of clauses (66 in this case)—0.136. The Rnd of the same editorial is—number of node strings (15 in this case) over sum of

clauses--0.227. The Ris of the same editorial is--sum of

idea strings (28 in this case) over sum of clauses--0.424.

In the average value group, the patterns within node

string and sum of idea strings are accounted for. AsubtopN

accounts for the coordination pattern within node string,

obtained from dividing sum of subtopics in all the node

strings by sum of node strings, in this example, it is 38/15

=2.533.

AsubclaN accounts for the degree of elaboration within

node string, obtained from dividing sum of subordinate

clauses under all the subtopics by sum of node strings. In

this example, it is 42/15=2.80.

AgenI accounts for the range of a developed idea,

obtained from dividing the total levels of generality of all

the idea strings by sum of idea strings. In this example,

it is 74/28=2.643.

AclaI accounts for the degree of elaboration of a

completely developed idea, obtained from dividing sum of

clauses in all the idea strings by the total sum of idea

strings. In this example, it is 99/28=3.536.

E. INSTRUMENT

Based on the notion of level of generality originated by Christensen (1963 & 1965), Nold and Davis (1980) devise a "psychologically accurate and pedagogically useful representation of the structure of text" (p. 141). Their matrix also makes visible a variant of Rodger's "stadium" (1966 & 1970) and the "macrotext" of a discourse discussed by Kintch and Vipond (1975).

Physically, the representation is a three-dimensional matrix, which requires considerable skill to draw and is quite time-consuming. Coe et al. (1986) modify it into a two-dimensional matrix that is still systematic enough to make the analysis replicable yet elegant enough (being two- instead of three-dimensional) to alleviate much drudgery in coding and drawing.

The two major tasks of matrixing are to locate the propositions in the discourse on the relative levels of generality and to show the connections among the propositions. Usually the connections are between two consecutive propositions, but connections between nonsequential propositions are common. They often occur when one proposition is supported by more than one other proposition. Each supporting point is then connected directly to the supported proposition.

Each proposition is represented by a circle with a

number in it.   The number indicates sequence.   The relations

among the clauses are represented by lines.   Very often

there are more than two lines attached to the circles,

because of the far-reaching relationships or the ambiguity

of the text.   Or there could be no line attached to some

circles if they are not semantically related to the

discourse.   The beginning of a paragraph is shown by a

paragraph sign,   ¶.

(i) Level of Abstraction and level of generality

Coe et al. (1986) clarify the distinctions between

abstraction and generality, which two have been used almost

interchangably by researchers in the Christensen tradition.   .

"Level of generality" in this matrix refers to "The Ladder

or Degrees of level of generality" (Berthoff, 1972).

According to Berthoff (1980), the main distinction between

abstraction and generality is that generality proceeds in

inducing similarity from various objects or events that

share something in common, e.g., "flower" is generalized

from roses, lilies, etc. Abstraction, by contrast, can move

from a single object or event to a concept that object/event

embodies, e.g., greenness abstracted from a concrete,

sensible green object.   Berthoff (1983) and Langer (1983)

consider generalization as subsumed under abstraction.   Coe

et al. explain that both abstraction and generalization are

essential to concept formation. For example, the concept of "love" is formed by first abstracting the "loving" aspect from each concrete act, then generalizing "lovingness" from different acts. Abstraction can refer to concepts embodied by an object or event, i.e., qualities beyond the five senses.

Some such qualities are analyzed in linguistics as semantic attributes: "+animate", "+human", "+mature", and "+feminine" are semantic attributes encompassed by the word "woman". Attributes are collected in specific ways for specific semantic referents, and attributes are as a rule more general than the words that include them because the attributes are shared by more than one such word.

Abstraction is related to human perception and interpretation, both of which Berthoff (1980) & Richards (1936) emphasize. Coe et al. (1986: 24) emphasize the function of schema, which allow preconscious abstraction of information. Schema turn Richards' (1936: 30) "sensation" into "perceptions", and distinguish Coleridge's "Primary Imagination" (preconscious perception) from "Secondary Imagination" (conscious interpretation). Since schema are patterns abstracted from reality, the patterns grant insight into the objects or events encompassed under the label (word).

Although abstraction is essential to concept formation, generalization "is what rhetoric chiefly describes" (Berthoff, 1980: 196) because level of generality explains coherence of text. Level of abstraction should have its

place in analyzing patterns of arrangement of which
abstracting is the essence. But the matrix used in the
present study turns on Christensen's notion of level of
generality.

(ii) The Three Relationships

Nold and Davis assert that three relationships can
connect related propositions in a discourse: coordination,
subordination, and superordination.

Coordination describes two clauses at the same level:

> (1) One school of thought . . . maintains that the
> current slump is deeper and will last longer than many
> people think (2) simply because it constitutes not
> merely a correction in the traditional economic cycle,
> (3) but rather is a precursor of a radical
> restructuring of the global economy. (Globe & Mail,
> Oct. 15, 1982)

clauses 2 and 3 are equally general (in this case, they
parallel each other). They will be drawn as follows:
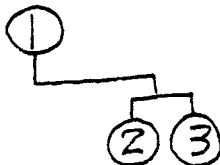
Subordination describes two clauses when the second is more specific than the first, therefore on a relatively lower level and logically subordinate:

> (1) As for the so-called jobs program, it is an expensive fake, (2) the government does nothing but wait for the magic of monopoly capitalism to unfold in its own way. (Canadian Tribune, Nov. 8, '82)

They will be drawn as follows:
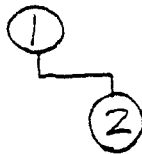
Superordination describes two clauses when the second is more general than the first, therefore on a relatively higher level, and is logically superordinate:

> (1) If our government had neither undertaken the Ten Construction, (2) nor started the Twelve Constructional Investment Plan, (3) we could not have kept the economic growth of this region at the current level. (Chung-Yang, Jan. 20, '83)

Clause 3 is superordinate to clauses 1 and 2, both of which are conditions for the statement in clause 3. They will be drawn as follows:
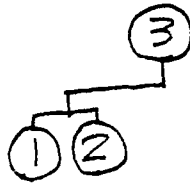
Nold and Davis also subcategorize the exact functions

of these three relationships. Their subcategorization

contains some problems, which, however, are solved by Coe et

al., who modify the subcategorization as follows (each

indicated by a letter for convenience in recording):

COORDINATION

T-contrasting
C-contradicting
J-conjoining
S-repeating (on the same level)

SUBORDINATION

F-defining
X-examplifying
R-giving reasons
D-deducing (i.e., deductive conclusion)
E-explaining (i.e., making plain by restating more
              specifically)
Q-qualifying

SUPERORDINATION

I-drawing conclusion (inference)
M-commenting (on a previously stated proposition)
G-generalization   (p. 35)

        Note that the "deducing" under subordination is

different from the "inference/conclusion" under

superordination.

        (1) All people are mortal;
        (2) therefore, Socrates is mortal.

On the matrix, the two clauses will be drawn as follows:
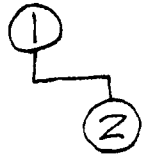
Since clause 2 is a fact encompassed in clause 1, the

conclusion is more specific than the generalization that

precedes it, thus is a deductive conclusion. On the other

hand, in the examples of superordination given above, the

first two clauses are not encompassed in the third; the

relationship involves conditioning.

(iii) Stadia, the number of idea strings, and node string

Rodgers (1970: 178) originates the concept of

"stadium",

> . . .whenever a passage of expository prose is unified
> and coherent, that passage possesses structure. And
> structure invariably implies the presence of distinct
> rhetorical units, which I call "stadia of discourse,"

which may be isolated as a paragraph. Nold and Davis

transform this concept, equating it with a more discernable

unit: a series of T-units uninterrupted by any rise in

level of generality. Coe et al. modify the latter into

"idea string."

As Nold and Davis' matrix is three-dimensional, it may

have more than one "plane" at the same level of generality.

They name the T-units on the same plane "node string". When

Coe et al. simplify the matrix to be two-dimensional, the

semantic relations are indicated solely by lines, and not

all the T-units on the same level are semantically

coordinated. There may well be more than one "node string"

(indicated by lines) on the same level.

The T-units immediately under the highest

superordination on the matrix can be taken as the gist of

the discourse (because they are the most general points that

expand the highest superordination); they are the subtopics,

or the "macrotext" discussed by Kintsch and Vipond (1975).

F. PROCEDURES

To enhance the objectivity of coding and to check the
reliablity of the matrix, two coders matrixed the data
independently. One coder was the writer of this thesis; the
other was an English major who received training in
matrixing and had done the same kind of coding for several
other projects (in which, however, the T-unit was always the
analytical unit). A third person, who modified the matrices
into their present state, judged the disagreement between
the two coders. The inter-coder agreement was 71.4%, just a
little lower than the usually accepted rate, 75%.

Considering the intrinsic ambiguities of the texts
themselves, the agreement rate may reflect the discrepancies
between readers' interpretations. The disagreement may in
part be accounted for by the fact that the two coders are
respectively from the two cultural backgrounds under
investigation here--Chinese and English--this perhaps
influencing the interpretations. The coder who is a native
speaker of English tended, for example, to interpret the
beginning and the ending clauses in the Chinese texts as the
topic proposition or the conclusion. Nonetheless, the
agreement rate was still over 70%, satisfactorily high--due
to the guidance of a well defined principle, level of
generality--in this kind of analysis, which has to be

subjective by its nature; thus the application of this matrix is reasonably reliable.

The coding procedures were as follows:

First I segmented each editorial into sequenced "clauses" as defined.

Second I translated all twenty Chinese editorials into English, under the supervision of the chairperson of Chinese courses at Simon Fraser University. Original segmentation was retained even when the English translation did not retain the original syntactic structure.

Third, each coder independently decided relative level of generality of clauses and drew lines connecting related clauses as explained above.

Fourth, the two coders discussed all disagreements between their two sets of matrices. All unresolved disagreements were forwarded to the third person.

Fifth, I counted or calculated each of the twelve dependent variables.

Sixth, I ran statistical analyses to discover if the three independent variables significantly influenced the dependent variables.

G. STATISTICAL ANALYSES

(i) T-test

In this study, the cell size is the same across the entire set of data. Thus whether the univariate homogeneity tests reveal significant differences within each main cell did not very much affect the reliability of the analyses of variance (Erickson & Nosanchuk, 1977). In order to double the cell size by combining the two sub-cells within each main cell, however, a t-test was first applied to the seven dependent variables in the ratio group (at macro level) and the average value group (at micro level) to check whether the data were homogeneous within each main cell. When variables proved homogeneous across two sub-cells in a main cell, the sub-cells were legitimately treated as one, thereby increasing the strength of the analytical results.

The null hypothesis of the t-test was: among the seven dependent variables, in the ratio group (at macro level) and the average value group (at micro level), there is no significant difference across the two newspapers in each main cell at 0.05 level of significance.

(ii) Two-way Anova

The T-test revealed that certain dependent variables were homogeneous in each main cell, thus a two-way multivariate analysis was performed on these variables to see whether language and/or political stance significantly influenced the dependent variables.

The null hypotheses of the two-way multivariate analysis were:

(1) Language has no significant effect on the variables homogeneous across any two subcells at the 0.05 level of significance.

(2) Political stance has no significant effect on the variables homogenious across any two subcells at the 0.05 level of significance.

(iii) One-way Anova

Since the two-way multivariate analysis could not be performed on some of the dependent variables, I applied a one-way multivariate analysis to see if newspaper idiocyncracy could account for these variables.

The null hypothesis of this one-way analysis was: at the 0.05 level of significance, newspaper idiosyncracy has no significant effect on any of the seven dependent variables--in the ratio group (at macro level) and in the

average value group (at micro level).

(iv) Correlation

I performed correlation tests to see if there was any significant correlation within and among the three groups of dependent variables.

The null hypothesis for the correlation tests was: there is no significant correlation among any of the twelve variables at 0.05 level of significance.

FINDINGS

I ran statistical analyses on forty newspaper
editorials at 0.05 level of significance. There were three
groups of dependent variables: the straight count group and
the ratio group at the macro level; and the average value
group at the micro level.

I will use the abbreviations of the dependent variables
in discussing the results of the analyses. The full names
are listed in Table 2:

Table 2

Full Names of the Twelve Dependent Variables

a. Straight Count Group

Clause	Paragraph	Level of Generality	Node String	Idea String

b. Ratio Group

Short Form	Full Name
Rgen	ratio of level of generality over Clause
Rns	ratio of node string over Clause
Ris	ratio of idea string over Clause

c. Average Value Group

Short Form	Full Name
AsubtopN	average subtopics in node string
AsubclaN	average subordinate clauses in node string
AgenI	average levels of generality in idea string
AclaI	average subordinate clauses in idea string

Two two-way multivariate analyses were the main analyses in this research. The analyses were done to see whether language and political stance significantly influenced the two groups of dependent variables: the ratio group at macro level and the average value group at micro level. I included the straight count group only in the correlation tests, to see how the straight count variables related to other variables.

There were other auxiliary tests. I first performed two t-tests to see whether the variables in the ratio and average value groups were homogeneous in each main cell. If they were, the two subcells would be legitimately combined so that the results could be stronger.

A. The Macro Level Variables

(i) t-test

In ratio group, I found Rgen significantly different between the two newspapers in each Chiness main cells--in Chi-com, t=-2.56, p=0.034; in Chi-cap, T=-3.61, p=0.009. Ris was also significantly different between the two newspapers in Eng-com cell--T=-2.77, p=0.030. Rns was the only variable not significantly different (homogeneous) between the two newspapers in each main cell: all the four p values were greater than 0.05 (See Table 4). On the macro level, therefore, I ran a two-way multivariate analysis on Rns only. The means and the results of the t-test are tabulated below:

Table 3
Means of the Macro-Level Variable

	Mean	Standard Deviation	N
Rgen			
Chi-Com 1	0.100	0.042	5
Chi-Com 2	0.173	0.048	5
Chi-Cap 1	0.098	0.018	5
Chi-Cap 2	0.153	0.029	5
Eng-Com 1	0.205	0.073	5
Eng-Com 2	0.151	0.108	5
Eng-Cap 1	0.160	0.044	5
Eng-Cap 2	0.172	0.020	5
Entire Sample	0.152	0.061	40
Rns			
Chi-com 1	0.234	0.022	5
Chi-com 2	0.240	0.052	5
Chi-cap 1	0.216	0.020	5
Chi-cap 2	0.237	0.033	5
Eng-com 1	0.199	0.037	5
Eng-com 2	0.197	0.042	5
Eng-cap 1	0.193	0.051	5
Eng-cap 2	0.211	0.049	5
Entire Sample	0.216	0.041	40
Ris			
Chi-com 1	0.331	0.062	5
Chi-com 2	0.343	0.060	5
Chi-cap 1	0.398	0.051	5
Chi-cap 2	0.463	0.067	5
Eng-com 1	0.410	0.077	5
Eng-com 2	0.597	0.130	5
Eng-cap 1	0.447	0.034	5
Eng-cap 2	0.442	0.068	5
Entire Sample	0.429	0.104	40

Table 4

t-test Results on the "Ratio" Group Variables

	paper	mean	SD	F ratio	T value	p
(Rgen)						
Chinese Com.	1	0.100	0.042			
				1.31	-2.56	0.034
	2	0.173	0.048			
Chinese Cap.	1	0.099	0.018			
				2.46	-3.61	0.009
	2	0.153	0.029			
English Com.	1	0.205	0.073			
				2.17	0.92	0.390*
	2	0.151	0.108			
English Cap.	1	0.160	0.044			
				5.02	-0.55	0.602*
	2	0.172	0.020			
(Rns)						
Chinese Com.	1	0.234	0.022			
				5.42	-0.22	0.838*
	2	0.240	0.052			
Chinese Cap.	1	0.216	0.020			
				2.71	-1.18	0.280*
	2	0.237	0.033			
English Com.	1	0.198	0.037			
				1.26	0.06	0.953*
	2	0.197	0.042			
English Cap.	1	0.193	0.051			
				1.08	-0.56	0.590*
	2	0.211	0.049			
(Ris)						
Chinese Com.	1	0.331	0.062			
				1.22	-0.29	0.779*
	2	0.343	0.069			
Chinese Cap.	1	0.398	0.463			
				1.75	-1.72	0.126*
	2	0.463	0.067			
English Com.	1	0.410	0.077			
				2.86	-2.77	0.030

	2	0.597	0.130			
English Cap.	1	0.447	0.034	3.98	0.15	0.884
	2	0.442	0.068			

*p>0.05

In the straight count group at macro level, there were some correlations. Clause correlated with Level of Generality (p=0.008), with Node String (p=0.000), and with Idea String (p=0.000). Paragraph correlated with Level of Generality (p=0.053), and with Idea String(p=0.008). Level of Generality correlated with Node String (p=0.002); and with Idea String(p=0.019). Node String correlated with IS, p=0.000 (See Table 5).

Table 5

Correlations amonng the "Actual Count" Variables

String	Paragraph	Level of Generality	Node String	Idea
Clause p=0.000*	0.144 p=0.187	0.380 p=0.008*	0.931 p=0.000*	0.813
Paragraph p=0.008*		-0.259 p=0.053*	-0.012 p=0.471	0.380
Level of Generality p=0.000*			0.437 p=0.002*	0.32

cases=40
*p<0.05

However, I found no correlation among the three ratios—Rgen, Rns, and Ris. All three p values were greater than 0.05 (See Table 6).

Table 6

Correlation among the "Ratio" Variables

	Rns	Ris
Rgen	-0.103 p=0.264	0.089 p=0.293
Rns		-0.143 p=0.190

cases=40

(iii) Two-way Multivariate Analysis

I ran a two-way multivariate analysis on Rns, the only macro level variable that was homogeneous across the four cells. Language significantly influenced Rns, F=6.976, p=0.012 while political stance did not significantly influence it, F=0.065, p=0.800. The interaction between language and political stance was not significant, F=0.360, p=0.552 (See Table 7).

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Table 7
The Results of the Two-way Multivariate Analysis on Rns

source variance	sum of squares	degree of freedom	mean square	F ratio	p
language	0.010	2	0.010	6.976	0.012*
polical stance	0.000	1	0.000	0.065	0.800
inter-action	0.001	1	0.001	0.360	0.552
explained	0.011	3	0.004	2.467	0.078
residual	0.053	36	0.001		
total	0,064	39	0.002		

*p<0.05

(iv) One-way Multivariate Analysis

Then, I applied a one-way multivariate analysis. Newspaper characteristic affected Ris only, F=6.200, p=0.000 while did not affect Rgen or Rns. Both p values were greater than 0.05 (See Table 8).

Table 8

Effect of Newspaper Idiosyncracy
on the "Ratios" Variable

variable	error SS	error MS	F	p
Rgen	0.982	0.003	2.158	0.065
Rns	0.051	0.002	1.146	0.361
Ris	0.178	0.006	6.200	0.000*

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*p<0.05

B. The Micro Level Variables

AsubtopN, AsubclaN, AgenI, and AclaI were the four "average value" variables at the micro level. I ran a t-test, a two-way multivariate analysis, and a one-way multivariate analysis on the variables.

(i) t-test

A t-test found no significant difference between the two newspapers in each main cell, the p values were all greater than 0.05 (See Table 10).

The means are tabulated in Table 9.

Table 9

The Means and Standard Deviations of the Micro-Level
Variables

	Mean	S. D.	N
AsubtopN			
Chi-com 1	2.692	0.361	5
Chi-com 2	2.648	0.455	5
Chi-cap 1	2.520	0.169	5
Chi-cap 2	2.364	0.134	5
Eng-com 1	2.696	0.186	5
Eng-com 2	2.402	0.300	5
Eng-cap 1	2.260	0.209	5
Eng-cap 2	2.394	0.169	5
Entire Sample	2.497	0.291	40
AsubclaN			
Chi-com 1	2.498	0.387	5
Chi-com 2	1.956	0.896	5
Chi-cap 1	2.430	1.105	5
Chi-cap 2	4.298	1.552	5
Eng-com 1	2.526	1.560	5
Eng-com 2	1.946	0.446	5
Eng-cap 1	3.002	0.420	5
Eng-cap 2	2.396	0.869	5
Entire Sample	2.632	1.160	40
AgenI			
Chi-com 1	3.164	0.471	5
Chi-com 2	2.656	0.358	5
Chi-cap 1	3.022	0.271	5
Chi-cap 2	3.370	0.504	5
Eng-com 1	2.752	0.218	5
Eng-com 2	2.698	0.232	5
Eng-cap 1	2.860	0.163	5
Eng-cap 2	3.176	0.403	5
Entire Sample	2.962	0.400	40
AclaI			
Chi-com 1	4.702	0.718	5
Chi-com 2	4.268	1.350	5
Chi-cap 1	3.930	0.316	5
Chi-cap 2	3.980	0.397	5
Eng-com 1	3.312	0.393	5
Eng-com 2	3.028	0.234	5
Eng-cap 1	2.950	0.257	5
Eng-cap 2	3.702	0.668	5
Entire Sample	3.734	0.822	40

Table 10

t-test Results of the Average Values Variables

	paper	mean	SD	F ratio	T value	p
(AsubtopN)						
Chinese Com.	1	2.692	0.361	1.59	0.17	0.870*
	2	2.648	0.455			
Chinese Cap.	1	2.520	2.364	1.58	1.62	0.146*
	2	2.364	0.134			
English Com.	1	2.696	0.186	2.68	2.07	0.079*
	2	2.366	0.304			
English Cap.	1	2.260	0.209	1.53	−1.11	0.300*
	2	2.394	0.169			
(AsubclaN)						
Chinese Com.	1	2.498	0.387	5.36	1.24	0.265*
	2	1.956	0.896			
Chinese Cap.	1	2.430	1.105	1.97	−2,19	0.063*
	2	4.298	1.552			
English Com.	1	2.526	1.560	12.24	0.80	0.463*
	2	1.946	0.446			
English Cap.	1	3.002	0.420	4.28	1.40	0.212*
	2	2.396	0.869			
(AgenI)						
Chinese Com.	1	3.164	0.471	1.72	1.92	0.094*
	2	2.656	0.358			
Chinese Cap.	1	3.022	0.271	2.71	−1.65	0.152*
	2	3.022	0.271			

English Com.	1	2.752	0.218			
				1.05	0.63	0.546*
	2	2.664	0.224			
English Cap.	1	2.860	0.163			
				6.13	-1.63	0.162*
	2	3.176	0.403			

(AclaI)

Chinese Com.	1	4.702	0.718			
				3.53	0.63	0.549*
	2	4.269	1.350			
Chinese Cap.	1	3.930	0.316			
				1.75	0.29	0.781*
	2	3.856	0.478			
English Com.	1	3.312	0.393			
				2.83	1.39	0.210*
	2	3.028	0.234			
English Cap.	1	2.950	0.257			
				6.75	-2.35	0.064*
	2	3.702	0.668			

*p>0.05

(ii) Correlation

After the t-test, I found three correlations. AsubtopN correlated with AclauI, p=0.000. AsubclaN correlated with AgenI, p=0.000. And AgenI correlated with AclauI, p= 0.000 (See Table 11).

Table 11
Correlations among the Four Average Values

	AsubclaN	AgenI	AclaI
AsubtopN	0.028 p=0.431	-0.100 p=0.269	0.540 p=0.000*
AsubclaN		0.642 p=0.000*	0.183 p=0.129
AgenI			0.472 p=0.001*

*p<0.05

(iii) Two-way Multivariate analysis

I ran a two-way multivariate analysis on the average value group. Political stance and language were the two factors. In the average value group, political stance significantly influenced three of the four variables: AsubtopN (F=6.870, p=0.013), AsubclaN (F=5.260, p=0.028), and AgenI (F=5.944, p=0.020), but not AclauI (F=0.819, p=0.371) (See Table 12).

Table 12

The Influence of Political Stance on the Average Values

variable	errorSS	errorMS	F	p
AsubtopN	2.653	0.074	6.870	0.013*
AsubclaN	43.806	1.217	5.944	0.028*
AgenI	5.076	0.141	5.944	0.020*
AclaI	15.366	0.427	0.819	0.371

*p<0.05

Language significantly influenced AclauI, F=22.135, p=0.000; but did not influence the other three variables (See Table 13).

Table 13

The Influence of Language on the Average Values

variable	error SS	error MS	F	p
AsubtopN	2.653	0.074	1.890	0.178
AsubclaN	43.806	1.217	0.884	0.353
AgenI	5.076	0.141	2.336	0.135
AclaI	15.366	0.427	22.135	0.000*

*p<0.05

Although both language and political stance significantly influenced these four variables, there was no signigicant interaction between language and political stance on any of the four variables, p values were far greater than 0.05 (See Table 14).

Table 14

The Interaction between Language and Political Stance

variable	error SS	error MS	F	p
AsubtopN	2.653	0.074	0.001	0.972
AsubclaN	43.806	1.217	0.933	0.340
AgenI	5.076	0.141	0.001	0.977
AclaI	15.366	0.427	2.756	0.106

(iv) One-way Multivariate Analysis

By a one-way multivariate analysis I found newspaper characteristics affected three of the four variables: AsubcluN, $F=2.781$, $p=0.022$; AgenI, $F=2.802$, $p=0.022$; and AclauI, $F=4.500$, $p=0.001$. AsubtopN, however, was not significantly affected, $F=1.911$, $p=0.100$ (See Table 15).

Table 15

The Influence of Newspaper Idiosyncracy
on the Average Values

variable	error SS	error MS	F	p
AsubtopN	2.326	0.073	1.911	0.100
AsubclaN	32.589	1.018	2.781	0.022*
AgenI	3.871	0.121	2.802	0.022*
AclaI	13.273	0.415	4.500	0.001*

*p<0.05

C. Summary

I ran two two-way multivariate analyses to investigate
the effects of Languge and political stance on the dependent
variables. The first analysis was on NS (Node String) at
macro level; the second, on the four average value variables
(at micro level).

At the macro level, the statistical results showed that
the Chinese had more macro-level coordinative structures
(indicated by Rns) than the English (p=0.012) while
Political Stance did not significantly influence Rns
(p=0.800). Neither Rgen nor Ris was homogeneous in each
main cell, thus I did not perform multivariate analysis on
the two variables.

At the micro level, the statistical results showed that
the Chinese had more elaborating details in a completely
developed idea (indicated by AclaI) than the English
(p=0.000). The communist had more coordinate subtopics
under a generalization (indicated by AsubtopN) than the
capitalist (p=0.013). The capitalist had more elaborating
details under a generalization (indicated by AsubclaN) than
the communist (p=0.028). Also, the capitalist had greater
range in developing an idea (indicated by AgenI) than the
communist (p=0.020). There were no interactions between
Language and political stance (all seven p ralues were
greater than 0.05).

Newspaper Characteristics significantly influenced (1)
the number of completely developed ideas (Ris), p=0.000, (2)

the elaborating details under a generalization (AsubclaN),
p=0.022, (3) the range of idea development (AgenI), p=0.022,
and (4) the elaborating details in idea development (AclaI),
p=0.001.

Some dependent variables corelated with each other. In
the straight count group, editorial length (Clause)
correlated with the number of coordinative structures (NS),
p=0.000, and with number of developed ideas (IS), p=0.000.
Paragraph (Para) correlated with the range of discourse
development (Gen), p=0.053, and with number of developed
ideas (IS), p=0.008.

Between the macro and micro levels, the range of
discourse development (Rgen) correlated with all the four
micro level structures (AsubtopN, AsubclaN, AgenI, and
AclaI), all four p values were 0.000.

At the micro level, the number of coordinate subtopics
(AsubtopN) correlated with the elborating details of idea
development (AclaI), p=0.000. The elborating details under
a generalization (AsubclaN) correlated with the range of
idea development (AgenI), p=0.000. The range of idea
development (AgenI) correlated with the elborating details
in idea development (AclaI), p=0.001.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

A. Hypotheses and Results

This research was motivated by the inappropriate

written discourse structures ESL students tend to produce,

hypothetically as a result of the influence of their native

languages. Much as CA (Contrastive Analysis) or EA (Error

Analysis) researchers examine sentence structure, I examined

the presumably competent argumentative discourse,

represented by newspaper editorials, to extract a "grammar

of passages" that reveals arrangement patterns of discourse.

My purpose was, first, to ascertain the existence of such a

"grammar"; second, to examine whether any rules of this

"grammar" differ across languages and/or political stances.

As to the actual transfer of such a structure from the

native language to the target language (as CA and EA have

hypothesized and, to a degree, proven), considering the

limitations of this study, I can reach only an inferential,

not a confirmatory, conclusion.

In the following discussion, I use the short forms of

the dependent variables. The full names of all the

variables are in Table 16.

Table 16

Full Names of the Twelve Dependent Variables

a. Straight Count Group

Clause	Paragraph	Level of Generality	Node String	Idea String

b. Ratio Group

Short Form	Full Name
Rgen	ratio of level of generality over Clause
Rns	ratio of node string over Clause
Ris	ratio of idea string over Clause

c. Average Value Group

Short Form	Full Name
AsubtopN	average subtopics in node string
AsubclaN	average subordinate clauses in node string
AgenI	average levels of generality in idea string
AclaI	average subordinate clauses in idea string

For statistical confirmation, the general hypothesis of the differences across languages and/or political stances was translated, according to rhetorical theories discussed in Chapter two, into several hypotheses with quantifiable variables. In the preliminary homogeneity check, the results of a t-test rejected the null hypothesis (that for the seven dependent variables in the ratio and average value groups, the two newspapers within each main cell do not differ significantly at 0.05 level of significance), because, at the macro level, only Rns was homogeneous in each main cell; the other two (Rgen and Ris) were not. However, at the micro level, all four average values

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(AsubtopN, AsubclaN, AgenI, and AclaI) were homogeneous in each main cell.

Clause and Paragraph are two relatively mechanical variables. Positive statistical relationships existed between clauses and all the three variables that accounted for the modification pattern at the macro level: Level of Generality, Node String, and Idea String. These relationships suggested that the length of the editorial (i.e., the total number of clauses) is likely to influence the number of node string and idea string. To cancel the effects of editorial length, I ran confirmatory analyses on the ratio group (derived respectively from dividing Level of Generality, Node String, and Idea String by Clause) instead of the straight count group.

There were also positive statistical relationships between Level of Generality and both Node String and Idea String. The discourse that contained more subtopics and/or fuller elaboration of ideas tended to go across more levels of generality (into details).

B. The Effects of the Three Independent Variables

I will discuss the effects of language, political stance, and newspaper idiosyncracy at both macro and micro levels. Note, however, that at the macro level multivariate analysis was performed on Rns only, because neither Rgen nor Ris was homogeneous in each main cell. Thus, effects of langauge and political stance on Rgen and Ris were not revealed, only their effects on Rns were.

(i) Language

Language significantly influenced (1) the number of macro-level coordinative structures (node strings), and (2) the number of clauses within idea strings. The Chinese editorials had significantly more node strings than did the English ones; and the Chinese editorials also had significantly more clauses within an idea string than did the English ones.

These results indicate that the Chinese editorials used more coordinative structures at the macro level and used more clauses to develop an idea at the micro level, although this elaboration in the Chinese did not involve significantly more levels of generality. Examining these two findings, we may say that the Chinese used more clauses

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in developing coordinate subtopics, rather than in
developing subordinate details under a generalization. This
tendency evinces the emphasis of parallelism, or Kaplan's
contention (1967 & 1968) of "spiral" development (repetitive
discussion of a topic in a discourse) in Oriental writing.

(ii) Political Stance

Political stance did not significantly influence the
number of node strings at the macro level (i. e., the number
of subordinate structures was not affected). It did,
however, significantly influence three of the four
micro-level variables that weave the texture of a discourse:
the subtopics and the subordinate clauses in node strings,
and the range of idea string development. The communist
editorials had more parallel subtopics under a
generalization and took more clauses to elaborate subtopics
than did the capitalist editorials.

Within node strings, the communist editorials contained
more AsubtopN, i.e., the communist had more coordinative
subtopics per node string than the capitalist. However, the
capitalist editorials contained more AsubclaN--which reveals
the elaborating details per node string--than the communist.
In short, the communist editorials spent more clauses in
developing coordinate subtopics under a generalization and
the capitalist in elaborating details.

Within idea string, the capitalist editorials contained

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greater range of idea string development (AgenI) than the
communist.

The communist editorials had a characteristic of using
more clauses in developing coordinate ideas under a
generalization, consequently node strings were developed
more by coordination than in the capitalist editorials.

Although not proven by statistical analysis, the
elaboration of the subtopics seems to result from
reiteration of propositions for the purpose of emphasis.
This repetition often occurred when the writers urged the
reader to respond by taking a certain attitude and/or
action.

The two-way multivariate analysis showed that there was
no significant interaction between the two major independent
variables, language and political stance. Since the
influences of the two variables were so clear-cut, it is
appropriate to conclude that language had its effect on both
the macro-level and micro-level structures; and political
stance, more on the micro level structures.

(iii) Newspaper Idiosyncracy

Newspaper idiosyncracy was analyzed to describe the data
unaccounted for in the analysis of the language and
political stance effects. I found that newspaper
idiosyncracy had significant effects on a macro-level
variable, Ris; and on three of the four dependent variables

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at the micro level: AsubclaN, AgenI, and AclaI. The
characteristics of individual newspaper had a wider effect
on the micro level structures, than on the macro level ones.

On the macro level, language significantly influenced
Rns; and newspaper characteristic, the number of Ris.
Neither Newspaper Characteristic nor language significantly
influenced Rgen.

However, an English communist editorial in the Guardian
contained the highest range (levels of generality) of
discourse development (Rgen), a Chinese capitalist editorial
in Chung-Yang contained the lowest. The general tendency
was that Chinese editorials contained fewer Rgen than the
English ones (see the means in Table 17), though the
differences between the two languages were not significant,
i.e., they might be a result of chance.

Table 17

The Means and Standard Deviations of Rgen
in Descending Order

Newspaper	Mean	standard Deviation	Order
Ren-Min	0.100	0.042	7
Guang-Ming	0.173	0.048	2
Chung-Yang	0.098	0.018	8
Lien-Heh	0.153	0.029	5
Canadian Tribune	0.205	0.073	1
Guardian	0.151	0.108	6
Globe & Mail	0.160	0.044	4
New York Times	0.172	0.020	3
ENTIRE SAMPLE	0.152	0.061	

At the micro level, newspaper characteristics
manifested in the elaborating details in node string
(AsubclaN), the range of idea development (AgenI) and the
elaborating details of idea development (AclaI). However,
coordinate suptopics under a generalization (AsubtopN) was .
not, but contingent to political stance.

C. Limitations

(i) Data Source

I selected newspaper editorials to represent the norm of discourse structure, but because the role newspapers play in different social contexts may differ, the eight newspapers were not perfectly matched. In accordance with the conclusion of the pilot study that Chinese argumentative writing tends to be didactic, I found that Chinese newspaper editorials tended to advocate government policies and instruct the audience to respond cooperatively. The English ones, by contrast, tended to criticize government policies. The criticism becomes acute in the English communist editorials since they are politically opposed to the government. The polarized roles of advocator and accuser may have affected the statistical results.

However, this sampling was concluded to be the most appropriate one available with the premise of controlling the representativeness of the data instead of controlling the comparability across the four main cells.

To ensure that the selected newspapers employed the arrangement demanded by the society, the standpoints of some of the newspapers have been balanced. For example, the two Chinese communist newspapers are respectively as a government mouth-piece (Ren-Min) and an intellectual opinion

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channel (Guang-Ming), although they are both under the same
censorship. I could have selected two newspapers with
greater similarity, but Ren-Min and Guang-Ming are generally
recognized as the two most authentic--thus most
representative--newspapers, therefore, the two were included
in the sample.

The more newspapers are included in the sample, the
less likely the inherent idiosyncratic writing preferences
could slant the results. But, again, to safeguard the
representativeness of the writing, only two newspapers were
selected in each of the four main cells.

In terms of function, only argumentation was analyzed;
other functions, e.g., narrative do not predominate in
editorials. In terms of the language factor, the findings
were limited in accounting for only Chinese and English.

(ii) Sample Size

The data processing in this study was very
time-consuming, hence the sample size limited to forty. The
processing included translating the twenty Chinese newspaper
editorials into English, replicating the coding, and
discussing the disagreement between the two sets of matrix
by the two coders. Considering the quality and detail
required in the matrixing, a sample size of forty was more
than appropriate. However, if research of greater scale
were to be done, an increase of sample size, especially the

cell size (five in the present study) would surely enhance
the strength of the findings.

D. Implications, Applications, and Generalization

The instrument used in this research was a
two-dimensional matrix, which visually represents discourse
structure. The matrix enables researchers and learners to
"see" how ideas are connected in a discourse and to quantify
the characteristics of the structure. I would suggest that
the matrix is useful for both research and pedagogy in both
reading and writing.

This thesis demonstrated how the matrix facilitates
rhetorical research by extracting patterns across languages
and political stances. Another experiment by Fahey (1986)
evinces how the matrix enhances writing pedagogy. Fahey
uses the matrix to prescribe a typical pattern of English
technical writing to a group of engineering students, and
the results show that this matrix approach is more effective
than the traditional writing pedagogy (which includes
discussion of the notion of coherence and unity, and
analyses of successful writing) in teaching students to
produce the required pattern in this specific kind of
writing. The uses of the matrix are not limited to teaching
basic writers: Coe (described in Coe et al., 1986) uses this
matrix approach in teaching advanced writing.

By exhibiting and eliciting the desired arrangement of
ideas, the matrix analysis enhances native language writing

ideas, the matrix analysis enhances native language writing (Fahey, 1986). Teaching second language writers with the matrix thus seems promising.

If the writing of Chinese ESL students exhibits the characteristics of Chinese argumentative arrangement (e.g., preference of developing ideas by coordination) discovered in the present study, the students can contrast their arrangements with the desired ones. Besides analyzing the desired arrangement, second language students can also use the matrix to diagnose the structural weaknesses of their writing. And second language learning for specific purposes (e.g., Business English for business people, journal article writing for researchers) may be greatly improved by matrix analysis, which can focus on the writing structure in the target field.

Note, however, that the clause may be so fine an analytical unit that it complicates the segmentation of text. The sentence (or T-unit) may be more appropriate for pedagogy, especially if the students already are able to write well-structured sentences.

The matrix should be taught in the context of rhetorical principles—the relations among the encoder, decoder, and subject matter—so students can understand why a particular form is desired on a particular occasion. Equipped with these principles, students can tailor their writings to their purposes even when no typical pattern can be extracted from the target situation.

I conclude, from the uses of the matrix, that the matrix can be used to extract a "grammar of passages" since

it can show the typical patterns required in specific kinds of writing and help produce these patterns by leading writers to fill in the slots of the appropriate pattern.

The culturally typical patterns discovered in this research can be used to generate and restrain the processing of written discourse as all such frames do. So when we apply these patterns in pedagogy, we seem to replace a certain chaos in present writing pedagogy with bare structure. However, I propose such pedagogy primarily to make students and (especially) teachers aware of the functions of discourse structure and to develop the students' meta-knowledge of forms so that they may then recognize and control forms. To apply the matrix approach and use the patterns required by the communicational context is by no means a denial of other patterns; the point is to provide an instrument for analyzing potential patterns in various types of discourse.

Furthermore, since writing and thinking enhance each other, I conclude that this analytical tool, the matrix, can help emancipate writers and enable them better to understand the nature of writing, including the cognitive and communicative aspects involved.

As stated in the beginning of this chapter, the present analysis has a more general goal of investigating the potential of a "grammar of passages", which many teachers (of both native- and non-native-languages) and researchers (in various fields) demand.

Writing teachers commonly become aware of the lack of a

pedagogy for teaching text structure and consequent learning difficulties, but teachers are commonly stuck at this point of merely being aware. This research introduces a means for examining structure, for both diagnostic and generative purposes. This research also warns second language teachers to be more sensitive and skillful in handling students' problems in discourse arrangement, especially when the native language and/or culture of the student is vastly different from the target language.

Similar strategies should also be applicable in reading pedagogy: because reading and writing are interrelated, proficiency in one area facilitating proficiency in the other (Johnson & Dykstra, 1971). This should not be surprising since both reading and writing are the processing of graphic information. The matrix may enhance comprehension and memory of text, and a contrast between the texts in different languages may also help diagnose the problems nonnative speakers encounter.

E. Further Research

Further research may start from the limitations of the present study by (1) expanding data sources and sample size, and (2) encompassing more varieties of writing with different functions, rhetorical contexts, and languages, then further (3) exploring the relationships between arrangement and style, (4) comparing the characteristics of written and spoken discourse, (5) applying the matrix in pedagogy of both reading and writing, and (6) investigating the relationships between language, thought, and the environment, utilizing theories of, for example, communication and cognition.

Newspaper editorials are the sole data source of this research. If various types of writing are cross-examined, a more complete view of the language may appear. Sources like news stories, school texts, magazine articles, or even advertisements might contain valuable information (revealing the effects of different audiences, occasions, and functions).

Chinese and English were used in the present research. More such contrastive analyses may be performed on languages within the same language family (e.g., English and French), or across different families (e.g., English and Russian).

As the literature review reveals, the three departments

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of rhetoric are inseparably intertwined. The relationships between invention and arrangement can be evinced by Fahey's (1986) research. Further research may be valuable if the relationships between arrangement and style are clarified, e.g., by accounting for syntactic characteristics.

Only the arrangement of written discourse was examined in the present research. Seeing that "text structures" present problems in comprehension and memory of what was read, and that the "links" between utterances is a major problem researchers have in oral language production and comprehension, I propose to implement the matrix to account for the arrangement of oral discourse. Research on this arrangement has so far touched only individual utterances.

Cross disciplinary implications (e.g., with psychology) may at first sight seem quite distant from second language research. But ESL has now evolved far from mechanical drilling of sentences like "This is a book." Ianco-Worrall (1972) finds in her experiment that bilingual children tend to be more sensitive to the arbitrary nature of name-object relationship and to separate sound and meaning earlier than monolinguals. Ben-Zeeves (1977) also finds that bilinguals are more inclined to search for structures in perception and to recognize their own perceptions. These inclinations are considered cognitive advantages. Language is intertwined with cognition and perception.

Second language learning is a major component in bilingualism and multiculturalism, both of which we must examine in a larger context, in relation to other theories

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because language is organic, and so is the learner; neither exists in isolation.

Appendix

Extend the implementation of the 'Joint Production Contract'
System

Mar. 23, 1983. Ren-Ming

1 How to extend the implementation of the "Joint Production
Contract" system (2 which is usually referred to as the "Big
Contract",) from farmland to prairies, mountains, and
waterbands, etc., and to make the agricultural economy more
prosperous is an issue awaites scrupulous research.

3 The JPC system is a great creation of the Chinese
farmers. 4 It has shattered down the barriers of "leftism", (5)
opened a new way for agricultural advancement. 6 However, the
development has not been well-balanced. 7 One of the signs of
the imbalance is its rapid development in agriculture alone,
(mainly in growing grain, cotton, and oil-producing plants) 8 and the
results were eminent. 9 However, as a comparison, it has not
gone very far in stock-raising, forestry, nor fishery: 10 in
some of these areas, it has not even been implimented yet. 11
This situation is a disadvantage to the full-scaled development
of our rural areas. 12 The JPC system has been assessed to be
suitable only for the impoverished areas; (13) unsuitable for
prosperous areas. 14 This judgement has now been corrected by
facts. 15 Is this system applicable to areas other than
agriculture - e.g., stock-raising, forestry, or fishery? 16
Actually, this question has generally been answered by the

practical experiences of our people. 17 Within the last few

years, there have been some break-throughs made by various

workers in forestry, stock-raising, and fishery. (18) -.   .-

implemented the JPC system, 19 and , in general, the results

were positive. 20 It was almost that (whenever they) applied it

to, 21 there were changes taking place. (22) (and whatever)

enterprises it was implemented in, 23 there was prosperity. 24

In Gan-de county, Ching-Hai, which is profiled in one of the

feature stories in today's paper, after the fifty-three

stock-raising teams there had applied the JPC system for only a

year, 25 the harvest increased greatly. 26 The report also concludes that there are

six major advantages to the JPC system. 27 The advantages are

more obvious in the enterprises of exploratory nature, 28 e.g.,

exploring the utilization of mountains, rivers, and waterbands.

29 Consider the vast population, China does not have plenty

of farmland. 30 yet our prairies, mountains, rivers, and

waterbands are vast. 31 If we concentrate on the utilization of

the farmland only, 32 rather then trying to fully develop other

natural resources, 33 it would be impossible to have further

break-throughs in our agriculture. 34 Now that the ice of the

"leftism" has been broken, 35 (and) our people pressingly demand

a relaxation of the policy, 36 (so they can) apply the JPC

system to develop these natural resources. 37 We should meet the

demands of our people, (38) conform with and take advantage of

the great trend, (39) organize and guide our people on to the

broad way of the richness of the labor force. 40 Forestry,

stock-raising, and fishery are in the same boat. 41 *They should*
should start from overcoming the practical problems, (42) hold
on to the principles of the JPC system, (43) and apply them in
various, flexible ways. 44 For instance, the policy should be
relaxed in those contracts on exploration, 45 Mountain
exploration should be granted a decade or so on the contract, 46
thereby the profits of the pioneers can be better-secured. 47
For those enterprises run collectively and resulted in
dissatisfaction, if our people request to take them over through
the JPC system, it should be done as requested. 48 If teams work
better, we will take teams, 49 if families are the appropriate
working unit, we will take families. 50 (Besides,) the
"Management Contract" system can also be considered.

51 When JPC system is extended to forestry, stock-raising,
fishery, etc., (52) (it) will bring greater prosperity to the
rural economy. (53) Of course, (it) will also cause new
problems. 54 We must not overreact on anything new based on our
leftist prejudice, (55) (nor) rush into any "correction". 56 To
equip ourselves with the analytical attitude is what we should
do, other than examining and investigating the problems
extensively. 57 Our rural production level is still low, 58 and
our commodity production is still under development, (59) (so
we) should allow certain extent of circulation and various
combinations of of the funds, skills, and labor, 60 (because)
they are helpful to the development of the rural economy.

61 This year, in the vast rural areas already adopted the system, we should emphasize the stability of production, (62) perfect the 'Joint Production Contract' system on the premise of maintaining stability in large, (63) allow the farmers enhance their productivity more devotedly and confidently. 64 In those areas that have not adopted the JPC system, we should give them the chance to try. 65 If we can take good care of these two aspects, (66) (we) will bring even stronger stimulation to agricultural advancement.

把联产承包制引向更广阔的领域

本报评论员

如何把联产承包责任制（群众通俗称为大包干），从包农田引向包草原、包山水、包滩涂等等领域，把农村经济搞得更加欣欣向荣，是目前需要认真研究解决的一个大问题。

联产承包责任制是我国农民的伟大创造，它冲破"左"的重重阻力，为发展农业开创了一条新路。但是责任制的发展不平衡，这种不平衡的表现之一，就是农业方面（主要又是粮、棉、油等种植业方面）发展得快，成绩显著。相比之下，畜牧业、林业、渔业、工副业等等方面，进展得不够快，有的甚至还没有打开局面。这种状况，对全面发展我国农村经济是不利的。联产承包制过去曾经被认为只适用于贫困地区，不适用于富裕地区。这个看法已经被实际生活纠正了。那么，联产承包制对于农业以外的其它行业，例如畜牧业、林业、渔业等等，是不是适用呢？其实，这个问题在群众实践中已经基本解决了。这几年，无论是林、牧、渔等业，都有一些单位突破旧框框，实行了大包干，效果大多很好，可以说是包一处，变一处；包一业，兴一业。今天本报报道的青海甘德县，53个牧业生产队大包干仅一年，就取得很好效果，并总结出大包干有六大好处。特别是一些开发性事业，如开发荒山、荒水、荒滩等，联产承包制的威力尤为突出。

我国耕地按人口平均不多，但草原、草坡、宜林荒山、水面和滩涂异常广阔。只是在耕地上做文章，不充分开发利用这些自然资源，我们的农业就不可能有更大的突破。现在"左"的坚冰已被打碎，广大群众迫切要求放宽政策，采用大包干的办法开发这些自然资源。我们应当满足群众的要求，因势利导，组织群众向更为宽广的劳动致富道路前进。林、牧、副、渔各业，情况相同，应该从实际出发，根据大包干的基本原则，采取灵活的办法。比如对开发性的承包，政策就要适当放宽，承包开发荒山可以一包几十年不变，确保承包者的物质利益。有些原来由集体经营、长期办得不好的工副业，凡是群众要求包的，可以用招标承包等办法坚决包下去，宜组则组，宜户则户，也可以搞经理承包制。

联产承包制在林、牧、副、渔等业进一步扩展，必将使农村经济更加活跃。当然，也会带来一些新问题。一定不要用"左"的偏见，看到一点什么就大惊小怪，更不要急急忙忙去"纠偏"。应当采取分析的态度，多看看，多作些调查研究。我国农村生产力水平还低，商品生产不发达，应当允许资金、技术、劳力一定程度的流动和多种形式的结合。这对发展农村经济是有利的。

今年，在已经建立了联产承包制的广大农村，要把工作重点放在稳定上，在有利于稳定的前提下完善责任制，让亿万农民更放心更用力地去发展生产。那些还没有建立联产承包制而群众要求建立的地方，则放手让群众去实践。如果把这两个方面的工作都做好，就会给农业的发展带来更强大的动力。
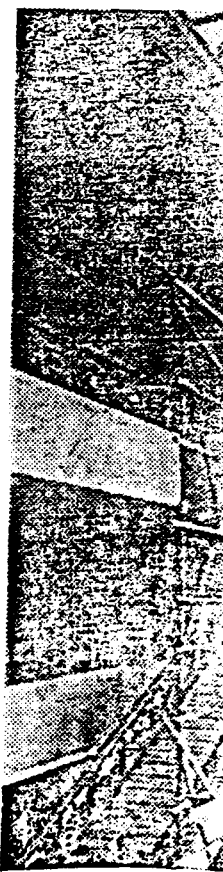
151

Ren-Ming (1983-03-23)

152
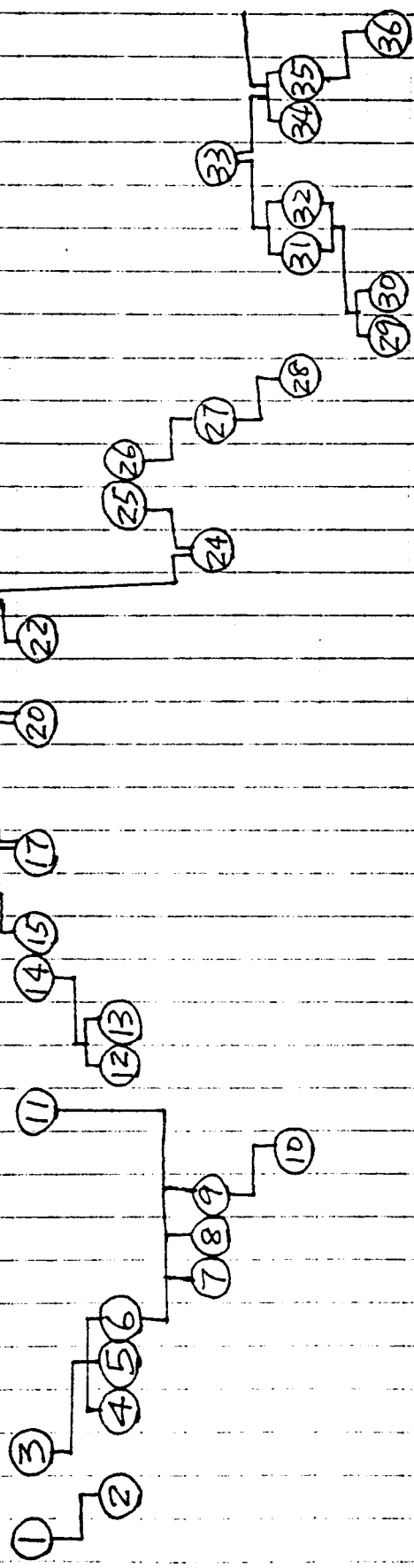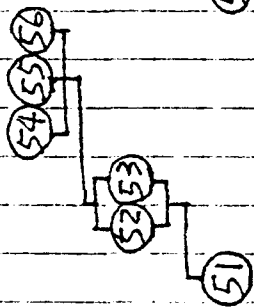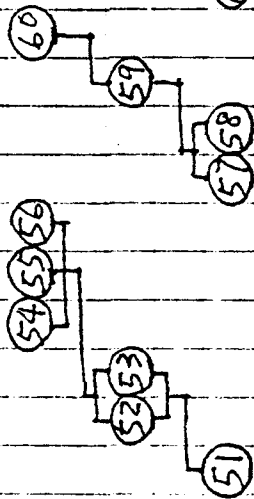
Variable Counting

In the following tables, dashes ("-") indicate the lines on the matrix, rather than the range between the two connected clauses.
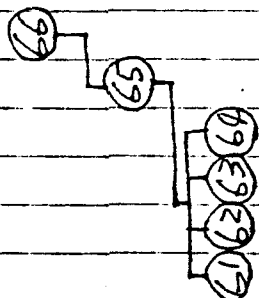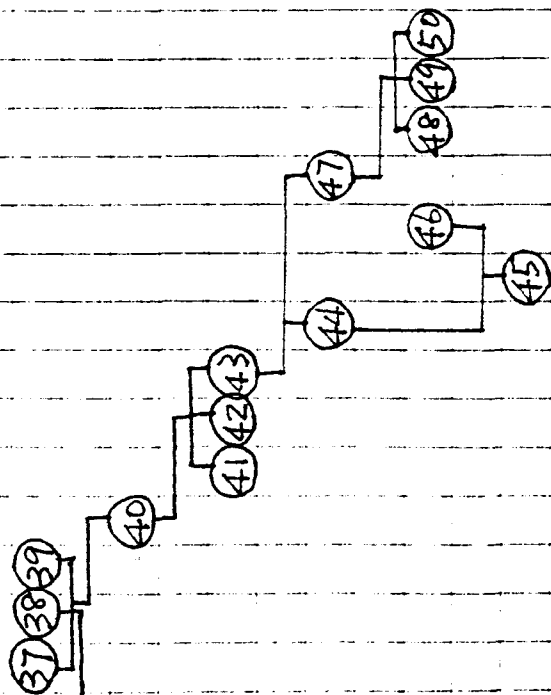

Counting of
AsubtopN and AsubclaN

Node String	Subtopics	Subordinate Clauses	Number of Sub-clauses
4-5-6	3	7,8,9,10	4
7-8-9	3	10	1
12-13	2	0	0
21-23	2	20,22	2
29-30	2	0	0
31-32	2	29,30	2
34-35	2	36	1
37-38-39	3	34 to 36, 40 to 50	14
41-42-43	3	44 to 50	7
44-47	2	45 to 50	6
48-49-50	3	0	0
52-53	2	51	1
54-55-56	3	51-52-53	3
57-58	2	0	0
61-62-63-64	4	0	0

Counting of
AgenI and AclaI

Idea String	Clauses	Levels of Generality
2-1	2	2
5-4-3	3	2
8-7-6-3	4	3
10-9-6-3	4	4
10-9-11	3	3
12-13-14	3	2
15-16	2	2
17-16	2	2
17-18	2	2
17-19	2	2
20-19	2	2
20-21	2	2
22-23	2	2
24-23	2	2
24-25	2	2
28-27-26	3	3
29-30-31-32-33	5	3
34-33	2	2
34-37-38-39	4	2
36-35-33	3	3
36-35-37-38-39	5	3
42-41-40-37-38-39	6	3
45-44-43-40-37-38-39	7	5
45-46	2	2
50-49-48-47-43-40-37-38-39	9	5
51-52-53-54-55-56	6	3
57-58-59-60	4	3
61-62-63-64-65-66	6	3

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