DOCUMENT RESUME

ED 071 485   FL 003 588

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TITLE   The Thread of Discourse.
INSTITUTION   Cornell Univ., Ithaca, N.Y. Dept. of Modern Languages
                and Linguistics.
SPONS AGENCY   National Science Foundation, Washington, D.C.
REPORT NO   NSF-GS-3180; NSF-TR-1
PUB DATE   72
NOTE   374p.

EDRS PRICE   MF-$0.65 HC-$13.16
DESCRIPTORS   *Communication (Thought Transfer); Connected
                Discourse; Deep Structure; *Discourse Analysis;
                Generative Grammar; *Information Processing; Language
                Patterns; *Language Research; Linguistics;
                *Linguistic Theory; Literary Criticism; Paragraphs;
                Rhetoric; Semantics; Speech; Surface Structure;
                Transformations (Language); Verbal Communication

ABSTRACT
                This report contains an extensive discussion of an
approach to the study of discourse. Initial remarks concern arguments
for studying discourse and approaches for discourse study that have
been used; the author then discusses the relationship of discourse
analysis and generative semantics. Language is considered on two
issues: the decisions that a speaker can make regarding what and what
not to say, and the mechanisms and patterns that are available to him
for implementing the results of those decisions in a way that
communicates with another person. The remainder of the report
discusses relevant issues in this approach to the study of discourse.
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ED 071485

THE THREAD OF DISCQURSE

(Technical Report No. 1,

National Science Foundation Grant GS-3180)

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FL 003 588

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Preface

The project for Cross Language Study of Discourse Structures was funded in August of 1970 for a two year period by National Science Foundation grant GS-3180 to Cornell University.

Under that grant I traveled to three field locations and held workshops in which thirty-one languages were represented. The tangible results of those workshops were thirty papers submitted for publication on the topic of discourse, seventeen papers on other areas of linguistics that needed to be cleared up so that discourse studies could progress, and this report.

The most interesting result was the discovery of the overlay pattern of text organization described in Chapter Nineteen. Thurman's work on linkage and chaining (Chapter Twenty-one), Litteral's on time indexing (Chapter Three), the distinction between rhetorical and lexical relations (Chapter Fourteen), and Thurman's suggestions for decomposing texts to display their discourse properties (Chapter Six) all have broad significance.

This report is the part that could be gotten ready in the time available of a fuller discussion of discourse in language. I have included more than half of what I originally planned, and have sketched out the rest.

Collaborators in the workshops include all the authors of papers listed at the end of the preface. Most of them are field investigators of the Summer Institute of Linguistics, which is affiliated with the University of Oklahoma. The Institute provided the physical facilities for each workshop and contributed administrative support. Ivan Lowe in Brazil and Nellie Hidalgo in the Philippines lectured, Harland Kerr, Bruce Hooley, Richard Elkins, Karl Franklin, and Lee Ballard visited, and Martin Krusi, Horst Stutte, and William Hall took advantage of the workshop environment to begin papers on Chiquitano of Bolivia, Gaveao of Brazil, and Siocon Subanon of the Philippines respectively. Outside the workshops I conferred with profit with Austin Hale in Nepal and Paul Freyberg in New Guinea. Robert Litteral, a graduate student from the University of Pennsylvania, acted as my assistant in the Philippines.

This project has led to two further developments. The first is an exploration, with Ivan Lowe and Thomas Crowell, of formalisms that might be more useful than the ones current in linguistics. The second, for which continuing support has been requested from the National Science Foundation, involves

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looking into the tie between morphological categories and discourse structure. ·Categories like tense and definiteness are frequently labeled and let go; but there is evidence that they can be understood better by relating them to where · they are used in discourse.

Joseph E. Grimes
Principal Investigator
July 1, 1972

Following is a list of papers produced in the workshops. Where the paper has appeared or is in the process of publication, the journal is given.

Brazil

Nancy E. Butler, Verb derivation in Terena
Thomas H. Crowell, Cohesion in Bororo discourse, Linguistics
Rose Dobson and Helga Weiss, Kayabi clause structure
Peter H. K. Kingston, Mamainde syllables
Barbara J. Kroeker, Morphophonemics of Nambiquara, Anthropo-
         logical Linguistics 14:1.19-22 (1972)
Menno H. Kroeker, Thematic linkage in Nambiquara narrative,
         Appendix A of this volume
Ruth McLeod, Paragraph, aspect, and participant in Xavante,
         Linguistics
Wilbur K. Pickering, Apurina, M. Cohen, ed. Les Langues Dans
         le Monde
Orland Rowan, Some features of Paressi discourse structure,
         Anthropological Linguistics 14:4.131-146 (1972)
Mickey Stout and Ruth Thomson, Kayapo narrative, International
         Journal of American Linguistics 37:4.250-256 (1971)
James Wheatley, Pronouns and nominal elements in Bacairi
         discourse, Linguistics

New Guinea

Janice Allen, Halia sentences, Pacific Linguistics
Jerry Allen, Tense-aspect in Halia narratives, Oceanic Linguistics
John Austing, Semantic relationships in Omie
June Austing, Omie discourse, International Journal of
         American Linguistics
Donald Davis, Wantoat paragraph structure, Linguistics
Joseph E. Grimes, Outlines and overlays, Language
-----, Kinds of information in discourse, Kivung 4:2.64-73
         (1971)
Roberta Huisman, Angaataha narrative discourse, Linguistics

Ronald Huisman, Angaataha verb morphology, Linguistics
Helen Lawrence, Location in Oksapmin, Anthropological Linguistics
Marshall Lawrence, Oksapmin sentence structure, Pacific
          Linguistics
Ronald Lewis, Sanio-Hiowe paragraph structure, Pacific Linguistics
Sandra Lewis, Sanio-Hiowe verb phrases, Pacific Linguistics
Robert Litteral, Rhetorical predicates and time topology
          in Anggor, Foundations of Language
Shirley Litteral, Orientation shifts in Anggor, Pacific
          Linguistics
David Strange, Indicative and subjunctive in Upper Asaro,
          Linguistics
Robert Thurman, Chuave medial verbs

Philippines

Seymour Ashley, A case classification of Tausug verbs,
          Anthropological Linguistics
Marjorie Draper, Underlying case structure in Northern
          Kankanay, Asian Studies
Carl DuBois, Connectives in Sarangani Manobo discourse,
          Linguistics
Richard Gieser, Kalinga sequential discourse, Philippine
          Journal of Linguistics
Ruth Gieser and Joseph E. Grimes, Natural groupings in Kalinga
          disease terms, Asian Studies
Joseph E. Grimes, Participant orientation, Philippine Journal
          of Linguistics
Donna Hettick, Verb stem classes in Northern Kankanay,
          Oceanic Linguistics
Lou Hohulin, Complex predicates in Keleyi Kallahan, Pacific
          Linguistics
Richard Hohulin, Cohesive organization in Keleyi Kallahan,
          Pacific Linguistics
Betty Hooker, Cohesion in Ivatan, Asian Studies
Virginia Larson, Pronominal reference in the Ivatan narrative,
          Philippine Journal of Linguistics
Helen Miller, Thematization in Mamanwa, Linguistics
Jeanne Miller, Semantic structure of Mamanwa verbs, Linguistics
Mary Rhea, Remarks on prefocus in Sarangani Bilaan, Philippine
          Journal of Linguistics
Louise Sawyer, Aspect in Amganad Ifugao, Anthropological
          Linguistics
Anne West, The semantics of focus in Amganad Ifugao, Linguistics
Hazel Wrigglesworth, Ilianen Manobo narrative discourse

          I also wrote two other papers unrelated to discourse
during the workshops:

Review of Corstius, Exercises in computational linguistics,
          Language 47:4.975-978 (1971)
Huichol, M. Cohen, ed. Les Langues Dans le Monde

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CHAPTER ONE
WHY DISCOURSE STUDY?

Linguistics started small, concentrating on sounds
and words before phrases and sentences. There is always
excitement in new ideas about those areas, and the subject
matter has always shown itself tough enough to be challenging.
A linguist could fill a lifetime without needing to ask
whether the framework he worked in might also extend to take
in larger segments of verbal behavior.

Now that some of us are trying to expand our horizons
beyond the sentence to paragraphs and even entire discourses,
we seem to draw two kinds of reactions. One is encouraging
and a little wistful. Colleagues see that linguistics can
go in that direction and wish they had time to join us in
finding out how. The other reaction is mildly surprising
for a field in which one or another set of young Turks has
nearly always held the center of the stage: it is
suggested either that we can't work on discourse, because
it has been convincingly demonstrated that such work is
impossible, or that we shouldn't, because everything beyond
the sentence is the   dom of the rhetoricians, or the
critics, or the logicians.

Since I take it as a principle that the way to sell
soap is not to waste time arguing that Brand X won't get
the dirt out, but rather to show the way your own product
does its job, I propose no lengthy critique that will
demolish one by one the negative arguments about discourse.

In Section One of this chapter I will touch lightly on the criticisms I am aware of, then go on in Section Two to the reasons why I think it is not only possible but also down-right enlightening to study discourse. The third section of the chapter will sketch some possible consequences of discourse study.

1. WHY LINGUISTS SHOULD NOT STUDY DISCOURSE .

The first thing that has kept many linguists away from the serious study of discourse is probably the magnitude of the subject matter (Langendoen 1970.4). Like the Dutch boy with his finger in the dike, they look at how much they have to cope with and get the understandable feeling that the whole wild sea is out there. Beyond the ordered para-digms and mildly controversial counterexamples of sentence grammar they see business letters, conversations, restaurant menus, novels, laws, nonverbal behavior, movie scripts, editorials, without end. They are right. Yet there are ways of bringing a good deal of this under control, as I hope this book will show.

Totally apart from the question of magnitude there are limitations built into linguistic theory that have made it difficult to work on discourse from inside the discipline. The most obvious of these is the theoretical restriction of linguistics to relationships within the sentence. Bloomfield (1933.170), for example, in defining the sentence as 'an independent form, not included in any larger (complex) linguistic form', clamped a lid on linguistics that few have tried to lift. Dik (1968) rightly criticizes the effect of this limitation on our understanding of the kinds of relations between sentences that have to be assumed in order to account for things like conjunctions.

Chomsky (1957, 1965) not only perpetuated Bloomfield's
restriction uncritically, but made it even stronger by
having the sentence, or something very much like it, be the
distinguished symbol of the kind of grammar that can be
constructed as a formal system. His statements about the
aim of grammar being to account for all the sentences of a
language and only the sentences of a language had a similar
effect.

Chomsky's theoretically motivated view said that as
far as linguistics is concerned no relationships beyond the
sentence exist. Yet ignoring them has had odd consequences.
In Katz and Fodor's important 1963 article on semantics, for
example, they were forced to adopt the fiction that in order
to make a semantic interpretation of a text, all the sentences
of the text have to be conjoined into a single supersentence,
which is then amenable to interpretation by projection rules.
Postal also (1964) has to exclude some of the information
carried by pronouns from his linguistic analysis, although
he points out correctly that a good deal of the information
necessary for what he has to say there about pronouns is
contained within the sentence in which they occur.

One cannot criticize Bloomfield, Chomsky, or anyone
else who has operated like them for making a clear distinc-
tion between what they choose to talk about and what they lay
aside. Restriction of a field is essential for any kind of
scientific thinking. If someone wishes to focus on what
happens within certain bounds, anyone else who accepts the
rules of the game has to agree to those bounds. Trouble
comes only when we are given to understand that those are
the only reasonable or possible or interesting bounds, and
he who would disturb them is disrupting the peace of the
kingdom. In our discipline we do this by invoking the name

of Linguistic Theory, presented more as an eternal verity
than as the way some eminent and generally sensible person
happens to look at things at the moment. Frankly, at the
time Bloomfield wrote, sticking to the sentence was probably
the wisest thing he could have done. It gave him and those
who came after him breathing space to get a grasp on a broad
range of phenomena like word structure and the lower reaches
of phonology. Later on the limitation to sentences permitted
a thorough classification of patterns within phrases and
sentences. In the same way, Chomsky really needed a restric-
ted field within which to work out the consequences of his
ideas about the formalization of grammar. But now that we
have a grasp both of the classifying side of grammar and of
its expression in the form of generalizations within a
formal system, it is high time to make room for less narrow
limitations.

A different reason for urging linguists to hold back
from discourse is that the kinds of relationships that are
involved once we go beyond the sentence are different from
those that operate within sentences (Kelkar 1970). For
example, it is often asserted that stylistic relationships
have little in common with the relationships of ordinary
grammar, that perhaps they are a statistical property of
speech that linguists cannot deal with directly. In the
opinion of others style has an intangible nature that cannot
be approached with the combinatorial tools of linguistics.
What is overlooked should become plain later in this book:
First, there are perfectly straightforward combinatorial
relationships that operate in discourse, and second, no
matter what is meant by style, the problem is just as
prominent inside sentences as it is anywhere else in
language.

To maintain that linguists should not work with
complete discourses because that is the province of rhetoric
and literary criticism is a little like saying that physicists
should not work with chemistry or that information scientists
should have nothing to do with law. As a matter of fact,
chemists and lawyers have both profited because those outside
their discipline applied the concepts of a different field
to it; there is no reason why both rhetoric and literary
criticism should not be better off as a result of linguists
having tried their tools in those areas.

2. WHY LINGUISTS SHOULD STUDY DISCOURSE

As I suggested in the last section, linguists can and should work with discourse. None of the reasons given why linguists should leave discourse alone is more than a tactical barrier. Those reasons impede linguistic study mainly because we do not yet have much experience in finding our way around them.

For example, the magnitude of the subject matter, while vast, is not impossible to cope with. Progress in scientific thinking always implies distinguishing between generalizations that can be broadened on the one hand and kinds of complexity that can be left out of consideration on the other. Certainly in fields like mathematical biology, genetics, and astronomy, numberless observed phenomena have been successfully brought into the scope of a relatively small number of generalizations. Kemeny discusses optimis- tically the application of mathematical models in the social sciences even where problems 'are much too large to get explicit solutions for them and yet the number of parts is not large enough, nor are they homogeneous enough, to be able to pass to the limit'. In discussing optimal sequences of decisions that involve a large number of factors, Bellman starts from the working assumption that at any point in such a sequence the number of parameters that have to be taken into consideration is very small. The answer to complexity is not to give up the whole thing, but to find generalizations and simplifying assumptions that put their finger on the essential factors behind the complexity.

Suppose we were to look at what has already been accomplished in linguistics by taking the point of view of a hypothetical elf who is a good phonetician but who knows nothing of the kinds of generalizations linguists have made

since the times of the Hindu grammarians. We could imagine
how he might quail at the hopelessness of ever doing anything
about the mass of phonetic data that a linguist collects in
an ordinary working day. He knows, after all, that he is
dealing with sequences of motions in a many-dimensioned
continuous space, and that the exact correspondence even
between two successive utterances of what is supposed to be
the same word are rare. Yet because we non-elvish linguists'
have evolved a conceptual framework that takes in all this
complexity, it no longer bothers us. We are even tempted
(wrongly) to regard the study of phonological systems as the
most cut and dried part of linguistics. Where discourse is
concerned, however, we still feel in the position of the elf;
we have not yet come up with generalizations that can cope
with the magnitude of the subject matter. I suggest that
such generalizations are possible, and that we are already
on the track of some of them.

As mentioned, some of the relationships that we find
between sentences are the same as those we find between
elements of a single sentence (John Austing ms). The first
consequence of this is a redefinition of the notion of
grammar that does away with its traditional limitation to
sentences. I personally prefer to symbolize this change of
scope by choosing a psychologically neutral starting
symbol such as F for 'form' to represent the distinguished
symbol in a formal grammar.[1]

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[1]Substituting one symbol for another in a formal
grammar does not change the grammar, of course. A formal
grammar beginning with S is perfectly capable of being
developed into a discourse grammar rather than restricted

to a sentence grammar, But it is linguists' secondary and
even tertiary responses to the idea of grammatical systems
that seem to keep the lid on their thinking. Reshaping of
perspectives, in linguistics as in politics, is aided by
switching symbols.   .

        Relationships that I have characterized as belonging
to outline-like structures (ms) are well recognized in
sentences, where statements of constituency based on the
partitioning of strings are the backbone of the grammatical
tradition. Pike (1954.33,57) anticipated discourse studies
in showing how the notion of constituency applies from within
the word clear up to the 'behavioreme', a major unit with a
culturally recognizable beginning and ending on the one hand
and internal structure on the other. His characterization
of a discourse as a verbal behavioreme is still as good for
getting things started as anything we can think of, since it
emphasizes that discourse, like the sentence in the older
grammars, is a primitive notion that is not definable from
within the system.

        Although the field of rhetoric is independent of
linguistics, many of the relationships rhetoricians talk
about can be formalized quite well as constituency grammars.
The first example of this that came to my attention was
Daniel P. Fuller's Inductive method of Bible study (1959),
which applies rhetorical concepts to exegesis in such a way
as to parse texts in a tree representation, sometimes going
down as far as relationships among elements of a sentence,
but also uniting major segments of texts in terms of the
same relationships.

This rhetorical approach, incidentally, gives an
analysis of a text that is much more like that of a modern
propositional grammar (Langendoen 1969, Frantz 1970) than
it is like a pure constituency grammar like Longacre's (1968).
The rhetorical structure consists of underlying relationships
--generalization and example, say--for which there is explicit
but indirect evidence in the output form itself.

At the same time, the organization of a text above
the level of the sentence has more to it than can merely be
extrapolated from relationships within sentences. It is
for this reason that I have distinguished between lexical and
rhetorical predicates for a propositional model of discourse.
Rodgers, writing for a College Conference of Composition
symposium on the sentence and the paragraph (1966),
criticized the work of Christensen and Becker on paragraph
structure as being nothing more than 'extrapolations from
the sentence'; but he was only half right. Some relation-
ships on which paragraphs are built can apply at any level
of constituency including between words within a sentence;
only a few like those expressed by therefore do not seem to
have a place in sentence structure. The important point
for discourse studies is what John Austing documents for
Omie (ms): each relationship has several different forms
of expression, depending on what things are being related,
and relationships that have distinct expressions in some
contexts may have identical, ambiguous expressions in
others.

Gerald A. Sanders has gone a step beyond simply
saying that the familiar relationships of sentence grammar
apply on up the line. His claim, with which I agree, is
that a sentence grammar will not work unless it is part of

a discourse grammar, because certain factors are needed for
the understanding of elements in sentences that are not
available within those sentences themselves but only
elsewhere in the discourse.

A number of concepts have been developed specifically
for the study of discourse. Although from one point of view
it could be argued that these are relationships that are
different in kind from the ones linguists work with in
sentence grammars, it is important to notice that they all
relate to familiar concepts in grammar rather than being
totally from without. Among these are the notions of kinds
of information, participant orientation, information
structure, thematization, clause permutation, and variable
frequency rules, all of which are discussed later in this
book.

3. THE USE OF DISCOURSE STUDIES

Curiosity is, of course, adequate justification for
studying anything, even discourse. Nevertheless, discourse
study does seem to have some implications in other areas.
The most obvious is the likelihood that discourse studies
will require a reshaping of linguistic theory, certainly
by extending its scope if nothing else. H. A. Gleason, Jr.,
reported to me in conversation that when he worked out both
a sentence grammar and a discourse grammar of Kâte of New
Guinea, the discourse grammar, which included everything in
the sentence grammar as well, contained fewer irregularities
and was in some sense simpler. It is possible that the closure
of grammar on discourse, as Sanders maintains, will round
off our view of language in a much more integrated way than
can be achieved by truncating grammar at the sentence.

The implications of discourse study for language
teaching, while probably not a primary concern for first
year language textbook writers (though Willis and Agard,
1941, take it into account in their discussion of Spanish
tenses), are nevertheless there. One can no more string
sentences together at random in another language than he
can in his own. Certainly in intermediate and advanced
level language courses, and in the study of literature, the
results of discourse study should come to be a part of the
picture (Gleason 1968).

Young, Becker, and Pike (1970) have already attempted
to put the results of their research on discourse into the
teaching of composition. In the area of Bible translation,
which in some ways is very close to composition, Hollenbach
(1969), Beekman (1970), Frantz (1970), and Kathleen Callow
(1970) have made suggestions based on discourse oriented
models.

One can only speculate about the effect linguistic studies of discourse might have in the field of criticism, granted the traditional lack of interaction between them. I think that as linguists we can at least double check the critic in matters of structure. It also seems possible from within linguistics to pin down certain aspects of the coherence of a text, and even to show why some passages are incoherent. This is not the same as being able to say whether a particular passage is clear or not, though again linguistics may be able to raise a warning flag and tell the critic (or the writer when he is criticizing his own draft) that there are obstacles to clarity in the road ahead. Some aspects of style seem to be approachable from within a linguistic view of discourse (Grimes and Glock 1970). By no means can everything stylistic be broken to our bridle, but neither are all the horses wild.

Illustrations have already been given of inputs from the field of exegesis to linguistics. This looks like a two-way street. The rules of evidence in exegesis embody what can equally well be thought of as linguistic relationships, while the treatment of those relationships as part of a linguistic system should in turn help remove some of the fuzziness from exegesis.

One area of exegesis in which I am not aware that there has been interaction with linguistics, but where there could be, is in the interpretation of law. Reading the law is essentially an exegetical process, deciding what it says and what it excludes. Writing laws involves using language that seems designed to keep things from being said too clearly, but using it in such a way that the necessary lines of demarcation are unambiguously drawn. How parallel

legal exegesis is to, say, Biblical exegesis or historical
exegesis (Boeckh 1886, English translation 1968) bears
looking into.

Now that information retrieval is taking on greater
importance because of the proliferation of circulated
information, linguistics may have something to contribute
to it through discourse studies.[2]   In the first place,

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[2] Information scientists, it should be said, are not
standing by waiting for linguists to show them how to do
their job. Gerard Salton, for example (1968.196-199),
found that by using syntactic analysis he got retrieval
results that were essentially no better than the ones he
got by bypassing all considerations of linguistic structure
completely. I would like to see research done on this
Salton Effect in the expectation that we would learn something
about linguistics through it.

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studies of discourse seem to show that the essential infor-
mation in some discourses is localized, which implies that
for retrieval it might be possible to specify parts of the
discourse that do not have to be taken into account. There
is definitely a pattern of organization of information in
any discourse that can be recognized and should therefore
be explored for its usefulness in retrieval; for example,
Halliday's notion (1967b) of the distribution of given and
new information.

It has always been hoped that grammar would contain
clues to semantic structure. In a way it does, but those
clues are still no easier to read than are phonological
clues to grammatical structure. Taken together with other

discourse signals, however, it might prove possible to disambiguate the results of mappings from semantics to grammatical structure sufficiently well that a certain amount of semantic parsing might be derivable from a grammatical analysis.

There are also clues to semantic structure that do not fit into the notion of grammatical structure directly but which are still recognizable. Word collocations are one such clue; patterns of pronominal reference may also fit here.

Linguistics should be able to come up with a theory of abstracting. This theory should account for varying degrees of compactness in abstracts. For any degree of compactness it should give a basis for saying whether or not an abstract is complete in that it includes everything that should be in an abstract of that degree of compactness, and whether it is concise, in that it includes nothing that is superfluous. It should also be able to distinguish a non-abstract that sounds like an abstract from a real one.

Connected with abstracting is the problem of retrieval indexing. This is a matter of providing a representation of the meaning of a discourse that is easy to find and work through, and that somehow interlocks with the text itself in such a way as to facilitate retrieval. Specification of key terms is one approach that is commonly used; it involves not only the identification of those terms in a text that are truly its key words, but also the formation of thesauri to identify semantic neighborhoods of terms.

CHAPTER TWO
DISCOURSE SO FAR

This chapter is a quick review of ideas in
linguistics and related fields that have fed into the
formation of the views I present later in the book.   I
have not gone to any lengths to trace these topics out,
because that is material for several books in itself.

1.   RHETORIC

In western culture the tradition is a long one that
insists that there is a right way and a wrong way to put
arguments and other kinds of discourses together, and that
the right way can be taught.   This attitude has given the
field of rhetoric a prescriptive tone for two and a half
millenia: say this; don't put those things together; form
the rhythmic pattern thus.   Rhetorical works tend to be
schoolbook treatises, not descriptive statements associated
with science and research.   Yet this is the area where
discourse phenomena have traditionally been brought up and
discussed, to the extent that a very good start on the study
of discourse patterns in any of the major European languages
could probably be made simply by bringing together systema-
tically all the things that rhetoricians have said that
speakers of that language either should or should not do.[1]

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[1]Linguists today would point out that the gap .
between what rhetoricians and grammarians in the prescrip-
tive tradition say should be done and what accomplished
speakers and writers do is always noticeable. My point,.

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however, is that the rhetoricians raise questions that need
to be discussed in the analysis of discourse patterns, not
that they dispose of those questions in a uniformly
satisfactory way.

Linguistics can, I think, go beyond the insights of
rhetoric in its traditional form by providing a language
independent framework within which the rhetorical patterns
of each language fit as special cases.   Insofar as
linguistics explains language as well as describing it, it
also has something to say about what various rhetorical
phenomena contribute to the process of communication, about
the reason why they are there.

        Classical rhetoric is epitomized by the work of
Aristotle whose Rhetoric contains acute observations about
the structure of discourses that are aimed at changing
other people's behavior, and later by that of Quintilian
and Cicero.   The ancient sophists, some of whom were
Aristotle's contemporaries, have usually been cast on the
side opposite that of the angels because Socrates caught
them out on the philosophical worth of their arguments.
While we side with Socrates on the larger question, it is
perhaps good to remember that men like Prodicus of Ceos and
Gorgias of Leotini did at least pay attention to the forms
and techniques of discourse construction.   In the so-called
Second Sophistic Period of the second to fourth centuries
A. D. Aristotle's structural categories of speech were set
aside (Chase 1961).

        The medieval trivium combined rhetoric with
philosophy and grammar as the standard course of
instruction.   Here the object was not to teach effective

communication in the pupil's native tongue, but rather
in Latin as the international vehicle. The models were
found in the writings of medieval writers rather than in
the literary but non-Christian Latin of the classical
period, so that notions of innovation and exploitation of
the full resources of the language were marginal.

     Rhetoric now has split into composition, or the
construction of written discourses, and speech, or the
construction and delivery of oral discourses. In both
there is the attempt to force certain aspects of discourse
structure to the pupil's attention, to make him accustomed
to working with time-tested models rather than stringing
what he has to say together in a jumble. Rhetoric at its
best tries to teach the pupil to exploit the possibilities
the language gives him. Nowadays this is carried out more
fully in creative writing and advanced composition than it
is in speech. Academic work is focused on writing, while
creative speaking is heard of more often in Dale Carnegie
courses and Toastmaster's Clubs.

     The do's and dont's of the prescriptive tradition
are still the watchword of rhetoric; but it is becoming
more accepted that the models to be followed are not the
deductively fabricated dicta of the rhetoricians, based on
logic or principles of usage, but rather the accepted
writers themselves, regardless of the reasons the rhetori-
cians or the authors themselves might give for why a
particular thing is said in a particular way.

     My impression is that most of the points taught in
modern rhetoric of writing or speaking are still taught
mainly by osmosis. It is possible that by developing a

general scheme that accounts for different patterns of ex-
pression we might eventually be able to present a rhetoric
based on what is known about the nature of language.
Young, Becker, and Pike (1970) have attempted this, and the
outlook is promising. Vast numbers of students are exposed
to writing courses in high school and university; yet an
extremely small proportion of those who go into business
and the scholarly fields can write an intelligible
paragraph.

   It would therefore be no waste of effort to explore
further what a linguistic understanding of discourse could
do as a basis for a new prescriptive approach. At the same
time, I find insights that contribute to discourse
linguistics coming from people who are primarily skillful
practitioners of the art of teaching writing, yet whose
knowledge of linguistics itself precludes their making the
kind of systematizations a linguist would make. They are
doing something right, and linguists need to find out why
it works.

2. CRITICISM

   Literary criticism has never been noticeably close
to linguistics, yet the critic and the linguist who works
on discourse react to some of the same patterns in language.
For example, the notion of literary structure seems to be
handled in similar ways by critic and linguist. The critic
asks what the structure of a literary work contributes to
the total effect, more or less taking it for granted that
he knows what the structure is. The linguist, on the other
hand, is interested in the range of structures that are
available, the signals that identify them, and the scope of

what a given structure can be used to express. He is also
interested in the structure of discourses that the critic
might not even look at: a conversation at a party, for
example, or a description in the Sears, Roebuck catalogue.

With the publication of Propp's Morphology of the
Folktale in English in 1958 another aspect of structure
came into view. Propp, followed by Alan Dundes (1963, 1964),
analyzed the plots of folk tales in a way that George Lakoff,
in a paper read at the Summer Meeting of the Linguistic
Society of America, pointed out could be generated by a
very simple grammar. There have been questions raised about
whether this structure, which seems to characterize not
only the Russian fairy tales Propp worked with but also
such disparate things as Westerns and scientific papers, is
linguistic at all, or merely represents a kind of psycho-
logical template imposed on nearly anything to make it sound
interesting (Grimes and Glock 1970). June Austing, however,
finds that for Omie (ms) some uses of the transitional
particle iae are accounted for best on the assumption that
the speaker is aware of a transition from one segment of a
plot structure to the next.

Some other points that seem to be relevant in
criticism have their counterparts in discourse theory:
characterization, viewpoint, presuppositions, diction, and
lexical organization, to name some that seem most easily
accessible. Characterization involves providing information
about a character, either by talking about him descrip-
tively or by reporting selected actions he performs. This
information must be given in such a way that when the
character comes to do something that has particular signi-
ficance in the plot, it will be then be plausible for him

to do it because it is consistent with what else is known
about him. Linguistically this is a constraint on the
presentation of identificational information and background
in relation to action information. Characterization also
has the sense of establishing empathy between the hearer or
reader and a character, and in that sense depends heavily
on the richness and accuracy of the speaker's assessment of
who the hearer is and what his background is. Technically
it is possible for the speaker's perception of the hearer
to be embodied in the notion of the performative, discussed
in Chapter 3.

The spatial and social viewpoint from which an
action is told is well known as a trouble spot in criticism.
'The author fails to show us the world through Marcy's
eyes', 'it is hard to tell whose side he is really on',
'the payoff seems to hinge on the hero's knowing about
Burlington's tendency toward alcoholism, but there is no
conceivable way presented by the author by which he could
have found this out'. Discourse studies have already
uncovered patterns of spatial viewpoint (H. Lawrence, ms.)
that permit considerable complexity, yet a complexity that
is totally different from that of, say, the handling of
viewpoint in Conrad's Lord Jim.[2]

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[2]The term 'viewpoint' has two uses: (1) How the
author or speaker looks at life, in the sense of his
philosophy, and (2) How the author or speaker looks at a
particular scene, in the sense that he views it either as
a whole--the so-called omnicient viewpoint--or in terms of
the way one of the participants sees it, or in terms of the
way a nonparticipating observer sees it. In the study of
discourse the second use comes up constantly. The first use

may be in an area in which a linguist cannot operate as a
linguist; but where the critic comes into his own.

The problem of presuppositions comes up both in
literary studies and in discourse theory. 'Writing down'
and 'writing up' are cases in which the writer misjudges
the reader in making his assumptions about what the reader
already knows. In the first instance he tells the reader
things that he already takes for granted; in the second he
leaves the reader behind by skipping essential points. The
study of presuppositions not only involves what the speaker
expects the hearer to know in general, but also the
development of presuppositional complexes within a text,
where the way the speaker expresses himself reflects what
he thinks the hearer has gotten clear from what he already
said (Weizenbaum 1967).

Diction, the choice of the right word in the right
place, partially reflects whatever presuppositions the
speaker imputes to the hearer at the moment. Part of it
appears as a gradient going from specific expression to
more general expression for the same reference throughout a
segment of text. The tendency away from specific expression
is balanced off by a tendency to overload the hearer's
memory when general terms for several different things
become easy to confuse, and also by the need in some kinds
of texts to maintain a certain level of novelty and spice.
Another factor tends to be more pervasive: the effect of
the situation of speaking on the appropriateness of
alternate forms of expression.

The whole problem of how a speaker's internal lexicon
is organized and how that organization agrees with that of
the hearer is of interest to the student of discourse. It
is also of interest to the critic, most notably when a
discrepancy in that organization introduces a bar between
the writer and the reader. Some writers are said to have a
private vocabulary, others to be highly experimental in
their use of words, others to use symbolism that we cannot
penetrate; it all seems to come back to the comparability
of different people's lexical systems. In another direction,
psychologists have used crude measures of lexical struc-
turing like word association and the semantic differential
to get at abnormal mental states in a way that does not
seem too different from a critic's feeling that, say,
'Zabrowski's incessant reference to milk bottles in his
metaphors for nearly anything unpleasant make us wonder if
he is reporting the way an average Eastern European sees
things or if he is projecting his unhappy years on a dairy
farm on the rest of the world'.

Source criticism and its derivatives have been
practiced, in my opinion, with relatively little reference
to finding out what points of structure actually are
invariant in a particular person's pattern of usage, yet
serve to discriminate his works from those of others. The
points from which proof is derived tend to be things that
are easy to count, without any normalization to take care
of observable effects of style, genre, or subject matter.
Having done this kind of thing myself within extremely
broad statistical limits (Grimes 1963) I feel it is
legitimate to engage in this sort of counting in order to
get a rough approximation to the notion of similarity; but
I would insist that no theory of source criticism that is
realistic from the point of view of discourse has yet been
propounded. The idea of parametric predicates (Grimes and
Glock 1970) may have implications for source criticism.

. Ideally the factors on which a critic bases his
judgment ought to be built into a writer before he starts
writing. To the extent that they can be specified linguis-
tically, I see no reason why they cannot be taught. There
is a sense in which parts of this book depend on observations
made not only in teaching writing to freshmen, but also in
specialized teaching on the short story, the novel, and
expository and argumentative prose. Here, however, the
emphasis is on putting things that teachers of composition
know into a systematic framework; any of their expertise
that I cannot fit in readily has been left to one side for
the present. Perhaps it can be incorporated in the next
model.·

3. EXEGESIS

In this section I discuss primarily those aspects
of discourse that have come to light in the area of
Biblical studies, with which I am considerably more familiar
than with legal or historical exegesis. The standard
exegetical question concerns the way factors external to a
text influence the content and diction of the text. The
idea seems to be, put simply, that once those factors are
written off, the remainder represents the sense of the text
in a more abstract, general, and therefore more applicable
form. The factors themselves relate to the communicative
situation, the lexical and rhetorical resources of the
language itself, and the reasons why the particular text is
put together the way it is.

The area of exegesis generally labeled 'introduc-
tion' comes close to being a specification of the performative
elements of a text. Here it is customary to discuss author-
ship, the audience to whom the text was directed, and the

historical setting, both in terms of the culture of the
period (for example, Edersheim 1883 or Conybeare and Howson
1860) and the specific local situations that called forth
the text.

Studies of authorship involve not only who might
have written a work, but also, assuming it was a particular
person, what his personal experiences up to that point
were and where he must have been. Statements like 'it is
less plausible to assume that the author of Hebrews had
been involved in the actual temple ritual in Jerusalem than
it is to assume that his familiarity with those rites was
from a distance and so was couched in the terms of the
Pentateuch' illustrate the kind of working back from the
text itself to deductions about the person who formed the
text that is characteristic of exegetical method. Similarly
structured arguments concerning the audience rather than the
author appear in commentaries on the Epistle to the Galatians
(Lightfoot 1892, Burton 1920), where it is uncertain just who
the Galatians were to whom the epistle was directed, and
knowing who they were seems to influence how some statements
in the epistle are to be taken. In terms of discourse
theory, these studies are parallel to my deduction that a
certain Saramaccan text had to have been uttered in Para-
maribo, based on an analysis of the pattern of distribution
of 'come' and 'go' verbs (Grimes and Glock 1970).

In Biblical lexicography the problem of semantic
structure in general has been raised in ways that have
linguistic implications even though they are not usually
phrased in linguistic terms. Studies of the use of a
particular word in different contexts by a particular
individual, or by a group of individuals, are parallel to

the tracing of lexical idiosyncrasies referred to in the
section on criticism. Barr, in his Semantics of Biblical
language (1961, see my review 1963) makes a distinction
between text- and usage-based lexicography and etymologically-
based lexicography that has implications for any semantic
study. The influence of grammatical position and form,
and to a certain extent the influence of position in a text,
on the meaning of a lexical item, are traced carefully in,
for example, the Arndt and Gingrich (1965) entry for
pisteuō.

    Daniel P. Fuller's characterization of the recursive
relations that link both clauses and the textual units.
formed by linking clauses (1959, note also Ballard et al.
1971 and Grimes ms) has been a major stimulus to this study.
It has shown that the grammatical trees that characterize
sentences can be extended upward to groups of sentences,
without essential discontinuity, as is exemplified in John
Austing's paper on Omie (ms). Although I feel that grammars
based purely on constituency relations, even beginning with
semantics, have certain inherent limitations, Fuller's work
shows that if one is willing to set aside those limitations,
a tree representation of text structure can be enlightening.

    Ethel Wallis's study of the structure of the four
gospels (1971) illustrates the kind of contribution to
exegetical studies that can be made by a person who thinks
linguistically. Although her analysis does not fit any of
the models of discourse that we have yet, and so cannot
quite be put forth as an example of high level linguistics,
it appears nevertheless to be linguistically motivated on
the one hand and exegetically useful on the other.

4. LINGUISTICS

So far the greatest attention to discourse within
the field of modern American linguistics has been paid by
scholars of the so-called tagmemic school, which developed
in the middle 1950's under the stimulus of Kenneth L. Pike
(1954). Elson and Pickett's textbook (1962) and the work of
Robert E. Longacre (1964) furthered the work of the school,
which is summarized in an article by Pike (1966).

In my opinion Pike's most fundamental contribution
to discourse studies was his insistence that certain chunks
of human behavior exist and can be documented. They are
recognizable to those who participate in them, and often to
bystanders who understand the cultural systems involved,
as having a definite beginning and end. Behavior that is
characterized thus by closure is Pike's starting point for
the analysis of both verbal and nonverbal behavior. The
behavioreme, as he calls such a segmentable chunk of
behavior, has an internal structure, so that successive
segmentations of the behavioreme lead to the units of a
grammar, again either verbal or nonverbal (as exemplified
by Bock's analysis of cultural conceptions of space and time,
1962).

Since 'discourse' is a primitive term in the notional
system I build up in this book, it is not possible to give
a strict definition of it. Nevertheless, Pike's notion of
discourse as a verbal behavioreme is a better starting point
than any other I know of for communicating what a discourse
is. Like any other behavioreme, it is recognized by the
culture as an entity with a beginning and an ending, and has
an internal structure. Even when it is not immediately

obvious to an analyst what the beginning and ending signals
are or how the internal structure fits together, it is
possible to find particular discourses for which corrobora-
tion of discreteness can be gotten from speakers, and use
that evidence to build general models of discourse in such
a way that apparently dubious cases are seen to be special
instances of some model, just as linguists do for everything
else in language.

From the very beginning Pike pointed out the impli-
cations of the behavioreme concept for studies of discourse.
James Loriot seems to have been the first to attempt to
work this out on a large scale in a 1958 manuscript which
unfortunately was not published until much later (Loriot
and Hollenbach 1970). Pike's ideas were worked out in the
area of rhetoric by Alton Becker (1965, Young, Becker, and
Pike 1970), and in application to various languages by Loos
(1963) and in doctoral dissertations by Bridgeman (1966),
Wise (1968), and Powlison (1969). Pike gave a programmatic
statement of his view of the way discourse grammars might be
written in a 1964 article.

Although a formal theory of reference has been no
more prominent in tagmemics than in any other American brand
of linguistics, Pike and Ivan Lowe did work out systematic
relationships between pronouns and their referents for the
case of embedded quotations, with an elegant and exhaustive
solution that is quite atypical of attempts to apply
mathematical models to language (Pike and Lowe 1969, Lowe
1969). Lowe then worked with Mary Ruth Wise on applying a
similar model to sequential pronominal reference in a text,
with results that will be given in Chapter 9 (Wise and
Lowe 1972).

Although most of the early work of the Pike school
was directed toward the analysis and cataloguing of output
forms of language (Postal 1964) without much greater attention
to the semantics that lay behind those forms than that which
could be conveniently embodied in the labels of tagmemes,
Pike did foreshadow the development of case grammar,.so
important in current work on discourse. An article by
Janette Forster (1964), written under Pike's guidance, shows
the emergence of a notion of 'situational role', the part
someone plays in an action regardless of how it is reported,
as opposed to 'grammatical role', the place that participant
fills in the most immediately apparent grammatical structure.
Donna Hettick's study of verb stem classes in northern Kan-
kanay (ms) carries this idea a good deal farther, putting
emphasis on how the tightly constrained grammatical structure
serves to express a highly flexible system of semantic
distinctions.

Robert E. Longacre has contributed heavily to the
literature on discourse. In keeping with the tagmemic
tradition of surface grammars based on partitionings of
classes of strings, his earlier work was devoted largely to
classifying the discourse patterns he found; but more
recently he has also moved in the direction of including
semantics. His major volume to date is based on studies of
languages of the Philippines (1968), and a similar volume
is in preparation on languages of New Guinea. His semantic
emphasis appears in Ballard, Conrad, and Longacre (1971).
The Philippines volume is also significant because in it he
begins the development of a typology of discourse features.

The stratificational school of linguistics, origi-
nated by Sydney Lamb (1966), is free from inherent

limitations to the sentence. I have drawn heavily on the
work of H. A. Gleason, Jr. (1968) and his students (Taber
1966, Cromack 1968, Stennes 1969) in regard to the notion of
different kinds of information that appear at various places
in discourse and how they are related to the forms that
appear in text. Furthermore, Gleason has made a major
contribution in suggesting how the text of discourse might
be represented as an aid both to discovering and to displaying
interesting linguistic relationships. While discovery of
relationships is not particularly germane to the presentation
of those relationships in a grammar that is fully worked
out, as Chomsky has made clear (1957), at the stage where we
do not yet know exactly what it is we expect to find, any-
thing that helps us see patterns as a whole is an advance;
and the work of Gleason and his associates seems to me to be
just such a contribution.

        In Europe, where scholars do not appear to have felt
so strongly as in America that the sentence is the last
frontier of linguistics, linguists associated with the
Linguistic Circle of Prague investigated what I am calling
information structure and thematization in a productive
way. Chafe (1970) gives a resume of their work, but I sense
that it is colored by his judgment that thematization and
information structure are both concerned simply with the
introduction of new information. A much more valuable summary
of studies made on the Continent is embodied in Halliday's
three articles on transitivity and theme (1967a, 1967b,
1968), on which I have drawn heavily in Chapters 19 and 21.
I have found Halliday's work extremely productive in the
field, though I observe that most readers find it hard to
follow. Since I think what Halliday says ought to be more
widely available, I attempt to restate it in a form that is
easier to comprehend in Chapters 19 and 21.

Generative transformational grammar of the Chomsky
school has been reluctant to peer out over the boundaries
of the sentence. Nevertheless, especially in the area of
reference, it has operated under the assumption that some
information has to be available from outside the actual
productions of the grammar. This assumption, as I hope to
show, is not necessarily incompatible with any theory of the
generative transformational variety; but it does imply a
form of theory that looks rather different from today's
standard brands.

The theory of reference that a generative transfor-
mational theory has to cope with makes its lack felt in the
matter of pronominalization. In the Chomsky tradition
(which by no means represents the total family of theories
that are both generative and transformational) there have
been two approaches to pronominalization: deletion and
insertion.

Pronominalization by deletion holds that whenever
two noun phrases that are not distinct in reference stand
in a particular relation to one another, one of the noun
phrases is deleted. The extreme form of deletion would be
one in which not only must the noun phrases not be distinct
in reference; they must also be identical in form. George
Lakoff (ms) has also followed the line that pronominaliza-
tion arises transformationally by deletion.

Emmon Bach (1968) proposed a different theory of
pronominalization, followed with modifications by McCawley
(1970) and Langendoen (1970). He pointed out the complicated
nature of underlying representations that required identity
of noun phrases in deletion; for example, in The tall

teenager who came in here for a couple of hours yesterday
while it was raining must have forgotten his guitar, identity
implies that the word his derives from the tall teenager who
came in here for a couple of hours yesterday while it was
raining's. It would be less cumbersome, he points out, if
we could say that the sentence represents on the one hand
a proposition like x must have forgotten y coupled with x is
the tall teenager who came in here for a couple of hours
yesterday while it was raining (without going into the
complexities of the internal structure of that identifica-
tion), y is a particular guitar, and y belongs to x, together
with a principle that inserts the noun phrase identifying x
when x is first mentioned and supplies the corresponding
pronoun elsewhere.[3]

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[3]This is an oversimplification of English pronominal-
ization. Limitations on this basic pattern are discussed
extensively in the literature.

Not only does pronominalization by insertion give a
clear account of pronominalization phenomena,[4] it also fits

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[4]Pronominalization by insertion seems to be capable
of accounting for Bach-Peters sentences without becoming
trapped in infinite regress: in the man who discovered it
never realized the value of the process he stumbled on, the
referent of it is the process he stumbled on, involving he
in its definition, while the referent of he is the man who
discovered it, involving it in its definition.

---

neatly with the idea proposed here that different kinds of
information in discourse are characteristically encoded in
different ways and at different points in the discourse

(Chapter 3). This makes it possible to think of the
information in a discourse as partitioned into identifica-
tions, actions, evaluations, and the like, linked together
grammatically by thoroughly regular patterns.

I have cautiously bypassed some things that have
been said about discourse because I do not see that they
lead anywhere. The one I have most obviously skipped is
Zellig Harris's discourse analysis (1952a, b, 1963).
Harris has found that within a text it is possible to form
equivalence classes of substrings of sentences. A substring
a occurs along with a substring b in one sentence and with
c in another, say; b also occurs with d in some other sen-
tence and c with e in still another, giving sentences of
the form ab, ac, db, ec somewhere in the text. b and c
then constitute one equivalence class, and a, d, and e
constitute another. It is possible to analyze an entire
text into equivalence classes, especially if the sentences
are normalized in form.

What I think we have is an effect for which we
cannot yet account: call it the Harris effect. It may be
similar to the Edison effect in electronics. Thomas Edison
mentioned in 1875 that if a metal plate were placed on the
outside of one of his newly invented electric lights, a
current could be made to flow between it and the filament
when the filament was lit. He made a note of the 'etheric
effect' (and in 1883, patented it under the name of the
Edison effect), then went on to other things. Thirty years
later, in 1905, Lee DeForest capitalized on the Edison
effect and gave us the vacuum tube. I suspect that we may
be in the same position as Edison was regarding the Harris
effect. It is worth noting, but for the time being we do
not know what to do with it.

It is also of interest that the normalizing of
sentences to make it possible to get an analysis of a text
into fewer equivalence classes seems to have been directly
related to the development of the idea of transformations
(Harris 1957). Harris's term 'discourse analysis', though
defined very tightly, is too useful to allow it to remain
attached exclusively to equivalence chain analysis. I
prefer to speak of different kinds of discourse analysis,
one of which is Harris's.

Another effect to be noted and shelved for the time
being is the Salton effect. In his work on information
retrieval noted earlier, Gerard Salton attempted to evaluate
the quality of retrieval he was able to get. He found that
if he analyzed texts syntactically before processing them
against retrieval requests, the quality of retrieval was not
significantly greater than what he got by taking into account
only the frequency of occurrence of particular lexical items
in the text as a whole, independently of their syntactic
position. To the extent of establishing what a text is
talking about, then, the Salton effect points to semantics
without syntax. This kind of information retrieval does not
tell what the text says about the things it is talking
about, however; to say that a text has to do with disarmament
does not tell whether the author is for it or against it.

Another line of thinking I have not followed up
because I think it is a theoretical blind alley is Katz and
Fodor's treatment of a text as a supersentence formed by
conjoining all the sentences of the text. This manipulation
did allow them to apply their projection rules and develop
their notions of semantic structure, and from that point it
is justified. But it appears more than anything else to be

an artifact of the limitations of the theory under which
they were working, a ghost if you like of the assumption
that the task of linguistics is to explicate the sentences
of a language.

5. EMPIRICAL STUDIES

        A number of studies of discourse phenomena have been
made already for a variety of languages. These have served
as a testing ground for theories about discourse, and have
consistently resulted in an enrichment of our understanding
of discourse phenomena. There is no language for which the
discourse structure has been described thoroughly; yet the
composite picture from a number of languages certainly
points toward an increasingly consistent conceptual frame-
work for discourse studies. If we applied what we know now
to a single language, we could cover its discourse phenomena
fairly thoroughly, though there would be points where we
probably could not yet relate one part of the picture to
the other parts coherently.

        Studies by Pike and his students have touched on
English (Becker 1965) and Nomatsiguenga of Peru (Wise 1968),
and influenced studies in Kaiwa, a Guaraní language of
Brazil (Bridgeman 1966), Capanahua of Peru (Loos 1963),
Shipibo of Peru (Loriot and Hollenbach 1970), among others.
Longacre's work on discourse in the Philippines involved
Ata Manobo, Dibabawon Manobo, Ilianen Manobo, Sarangani
Bilaan, Tagabili, Atta Negrito, Botolan Sambal, Bontoc,
Mansaka, Itneg, and Maranao. He also worked with Reid,
Bishop, and Button on Totonaco of Mexico (1968), and on a
number of languages in New Guinea, the report on which is
forthcoming.

Gleason's group has studied Sango of the Central
African Republic (Taber 1966), Cashinawa of Peru (Cromack
1968), and Fulani of Nigeria (Stennes 1969). Gleason himself
has worked on Kâte of New Guinea.

In the series of workshops that formed the background
for the writing of this book I was able, with the assistance
of a grant from the National Science Foundation, to guide
discourse studies in Bacairí, Borôró, Xavánte, Nambiquara,
Kayapó, and Paressí of Brazil, Halia, Omie, Wantoat,
Angaataha, Oksapmin, Sanio-Hiowe, Anggor, and Chuave of New
Guinea, and Sarangani Manobo, Ilianen Manobo, Kalinga,
Keley-i Kallahan, Ivatan, and Mamanwa of the Philippines.
Prior to that series of workshops I had had a hand in discourse
studies in Munduruku of Brazil, Ayoré of Bolivia, Jibu of
Nigeria, and Otomi of Mexico, plus doing some work of my
own on Huichol of Mexico.

The point of all these field studies, of course,
is not simply to collect data for data's sake. Instead,
the attempt to work out each kind of discourse pattern as it
comes up puts pressure on the theory of language that has
guided the analysis, bending it one way or another. For my
own part, the studies have been carried out in an atmosphere
of interest and excitement, with the feeling that although
in general we think we know how and why language is put
together the way it is, there are areas that can be developed
best under the stimulus of unforeseen phenomena.

Another result of the field studies is the beginnings
of a typology of discourse. Longacre (1968) has extracted
the parameters of sequence and accomplishment, for example,
as the basis for his two-by-two division of discourse types.[5]

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[5]Aristotle (Rhetoric 1:3) distinguishes deliberative, forensic, and epideictic or ceremonial rhetoric as respectively future (giving advise), past (accusation and defense), and present (praise and blame).

Thurman (ms) has surveyed broad classes of cohesive phenomena and categorized them under the headings of linking and chaining. I have looked at patterns of presentation of information in texts and have come up with the typological notion of the outline as over against the overlay pattern (Grimes ms). These regularities across languages and language families help us to narrow down the field of what to expect, and provide some control for other kinds of cross language studies.

6. THE APPROACH OF THIS BOOK

Since I have deliberately taken discourse as undefined, characterized only in terms of Pike's notion of a verbal behavioreme,[6] there is very little in human speech behavior

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[6]Even though Pike's behavioreme is the starting point, the reader should be cautioned that my treatment of it is anything but that of the tagmemic school. For tagmemic studies of discourse and my reasons for wanting a more revealing theory of discourse, see Chapter 4.

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that does not somehow fall within the scope of this book. To me this is an advantage at this stage of our understanding: look at anything that might conceivably fit, and if there is a place for it, then make sure the conceptual system stays in a form that will continue to provide a place.

I suspect that this approach is a pendulum's swing in the
other direction from starting out with an arbitrary limita-
tion like Chomsky's and seeing how far it will go, so that
the next person to try his hand at a theory of discourse
may well go back to a more restricted starting point.

The generalizations I try to make in the book all
are related in form to the family of theories currently
known as generative semantics. That is, I assume that we
can say the most about language by separating out two
different things: the decisions a speaker can make regarding
what and what not to say, and the mechanisms and patterns
that are available to him for implementing the results of
those decisions in a way that communicates with another
person. The decisions that the speaker makes, including the
relations among them, are referred to as the underlying
formational structure (since it is verifiable only indirectly
from the forms he utters and the behavior that is associated
with the uttering) or the semantic structure. The relation
between the underlying structure and the speech forms that
are uttered is called the transformation, or better yet the
Transformation with a capital T, which is usually talked
about by decomposing it into a number of less complex
transformations with small t's.

An increasingly strong impression that has built up
throughout the period of study that resulted in this book
is that one of the things that current linguistic theory
lacks is a viable theory of reference. As already mentioned,
an implicit but formally unrecognized theory of reference
has been in use for years, expressed principally in
discussions of referential indices and coreferentiality. I
see no way to avoid bringing this into linguistic theory;

but in doing so, I suspect that something more than the
minimum needed to recognize coreferentiality will have to
be defined.

          Each of the linguistic traditions being talked
about today is good for certain things and spotty for others.
Even though when wearing the theoretician's hat I try to be
consistent with one particular way of looking at things,
I find that useful insights have been developed by people
with other points of view. It is all to the good when I
can put them into my perspective and find that they fit;
when they don't, the problem is then to revise my perspec-
tive to make room for the insight, not to throw out the in-
sight. A good example of this is tagmemics. I find, possibly
because most of my early training in linguistics was in
tagmemics, that it is an extremely useful tool for getting
the facts of language sorted out and organized. I also
recognize that when it came on the scene around 1954 it was
like a breath of fresh air in that it made it possible to
incorporate a certain amount of semantic information into
grammar via the notion of function. Since moving off in a
different direction in the early 1960's, however, I find
that tagmemics leaves something to be desired as a view of
what language is like, especially at the point where the
idea of function seems in practice to turn into an arbitrary
and almost mystical process for assigning tagmeme labels.
Nevertheless, I feel quite free here to use tagmemic ideas.
I recognize first of all that they do enable people to handle
linguistic data without getting lost regardless of how the
labels are assigned. I also realize that whatever the defects
of their results may be as seen through the prescription I
am currently wearing, I am likely to agree with at least
ninety-five per cent of the analysis that is made when all

is said and done, and there is no point in throwing out all
that just because I find that there are more consistent
ways of understanding the ragged five per cent.

In work that is as exploratory as this it is not
surprising that a large amount of methodology for organizing
data is mixed with theorizing. It is not really worth the
trouble to state relationships among data elements or
classes of data elements unless someone else can find the
same data elements and verify the relationships. At this
stage I am not even sure that it is possible to squeeze a
pure theory of language out of the practice of discourse
study. Where I have seen abstractions that can be made I
have tried to call attention to them, but many of the com-
ponents of a real theory of discourse are probably hidden
within recipes for lining up information of a particular
kind. I simply warn the reader about this, but do not
apologize for it.

Along with the intermixing of theory and practice
goes an inevitably large number of loose ends. We are not
yet ready for a compendium or a formal summing up of what
we know, because in some senses what we know is like a few
galaxies and what we do not know but hope to is like the
interstellar space that surrounds the galaxies: not very
crowded. Yet I do not feel that having large numbers of
unresolved questions about discourse is a bad thing as long
as we see progress in pulling together a core of theory
that allows us to work out toward the less explored areas.

CHAPTER THREE
EVENTS AND PARTICIPANTS IN DISCOURSE

To analyze discourse from a linguistic point of view requires that we find a workable starting point. The work of Gleason and his group has provided such an entering wedge. The basic idea behind their work is that different parts of a discourse communicate different kinds of information. The various kinds of things that are communicated in each part seem to be identifiable in any language, at least well enough that a meaningful preliminary breakdown of texts can be made.[1]

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[1] Part of this chapter and the next three was presented in a paper read before the Linguistic Circle of Papua and New Guinea on February 24, 1971, and subsequently published in Kivung (1971).

Empirically this distinction among various kinds of information has proved useful, not only in the studies on Sango, Cashinawa, Fulani, and Kâte that have already been mentioned in connection with Gleason, but also in Xavánte (McLeod ms), Mundurukú (Sheffler ms), Halía (Jan Allen ms), and others.

The distinction among different kinds of information is most obvious in narrative discourse as opposed to the procedures, explanations, and exhortations of Longacre's typology (1968). Procedures, which like narratives are based on the notion of temporal sequence, are the next most productive.

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Parenthetically, the texts that yield the most
consistent analysis are edited texts. Certain people in
any society have a reputation for consistently producing
the kind of discourses that other people want to listen to.
Part of the reason people like these discourses must lie in
their well formedness; that is, they are constructed according
to plans that make it maximally easy for hearers or readers
to comprehend them. Furthermore, even people who produce
highly valued discourses recognize that certain parts of
what they say can be improved by being reshaped or edited.
The principles that guide their editing behavior are likely
(unless they are imposed artificially from without, as for
example under pressure of another prestige language) to
represent a replacement of expressions that are less
consistent with the discourse as a whole by other expressions
that fit the structure and the context better. Speakers of
unwritten languages display editorial reactions just as
regularly as editors who work with paper and pencil.[2] The

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[2]I am indebted to Larry Jordan for calling to my
attention the value of beginning with edited texts, based
on his experience with Mixteco of Apoala in Mexico.

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analysis of discourse that has been edited is likely to be
easier, and at the same time more truly representative of
those patterns of expression that speakers of the language
react to as appropriate. Practiced discourses like folk
tales are less likely to be told poorly than, say, personal
narratives brought out on the spur of the moment with no
opportunity to shape the expression first.

Even edited narratives cover quite a range. To
begin analysis it is best to concentrate on simple

narratives. These are characterized by having well separated
participants: little or no merging of individual partici-
pants into groups or combining of one group with another.
A simple narrative may still, however, contain a large
number of distinct participants. Two-participant narratives,
though common, may actually not be the best kind to start
with, because the mechanisms needed to keep reference straight
in them are usually rudimentary. Three-participant narratives
are more likely to be revealing.

   The other characteristic that identifies simple
narratives is that in them telling matches time. That is,
the sequence in which events are told matches the sequence
in which the events actually happened. Many languages have
this as a strict requirement for all narration; others have
techniques whereby the temporal scene can be shifted at will
without losing the hearer. Texts with flashbacks, or that
begin in the middle of things, should be left to one side
at the start.

   To begin analysis with simple narratives does not,
of course, imply that we are limited to the study of
simple narratives. Like any exploration of the complex,
discourse study should begin in shallow water and only later
progress into the depths. What is learned in the study of
simple narratives becomes the scaffolding that allows
progress into other areas.

   The notion that different parts of a discourse
communicate different kinds of things agrees with
conclusions about language that have been suggested for
reasons totally unconnected with the fact that they facili-
tate the study of discourse. McCawley's suggestion that noun

phrases constitute a separate kind of grammatical production from the verb-centered part of sentences (1970), and that the two are laced together loosely and late in the derivational process, is motivated as far as I can tell by a need to account adequately for pronominalization patterns within sentences. It fits, however, with the distinction I make here between event information and identificational and other kinds of information. It also illustrates the notion that different kinds of information tend to be communicated by grammatically distinctive forms in surface structure.

1. EVENTS

        The first distinction made in the analysis of discourse is between events and non-events. In Garner, the halfback, made six yards around end we are told two kinds of things: a particular person did something (that is, an event took place), and furthermore, the particular person is named Garner and is a halfback (neither of which is an event). Sometimes entire paragraphs are devoted to non-events, as in the description of a scene or a person. At other times, especially in languages like Anggor (S. Litteral ms), long stretches of speech may be devoted to nothing but event information, the rules of the reference system being such that the hearer always knows by deduction who is doing what.

        Gleason, who pioneered in exploiting the difference between events and non-events, pointed out that different languages approach the time sequences between neighboring events in different ways. In Kâte, for example (Gleason 1968), events that are contiguous in time are distinguished

from those that are separated by a lapse period during which
nothing of significance for that particular story happens.
The lapse may be long or short; but if it is noticeable in
terms of the stream of action of the narrative, it must be
mentioned. Cromack (1968), on the other hand, finds that
Cashinawa requires a distinction between completing one
event before the next begins and continuing the earlier
event on into the next. In terms of Kate, a Cashinawa
completion might be either with or without lapse; but
Cashinawa speakers are not required to report contiguity
or lapse unless they want to call attention to it.
Cashinawa continuation, on the other hand, would undoubtedly
be equated with Kate contiguity.

        We can envision numerous logical possibilities for
temporal relations between two events that are reported as
a sequence. If we take A as the earlier of the two events
and B as the later, we can distinguish several cases: A
finishes significantly long before B begins, A finishes by
the time B begins, A finishes just as B begins, and A does
not finish by the time B begins. In the last case we might
have to specify further whether A ends during B, A ends
when B ends, or A contains all of B and continues on after
B is finished.

        Robert Litteral (ms) has applied the mathematical
notion of topology to the linguistic treatment of time.
He notes first that when time is handled by language, it is
measured only rarely. For example, in I went down town and
bought a shirt the first event, going down town, may have
taken half an hour, while the second may have taken four
minutes, or vice versa, depending on transportation
facilities and shopping habits. Most languages would not

give even a relative indication of the duration of the
events, although they have the capacity to add this infor-
mation if there is some reason to, as in It took me half an
hour to go down town; then I bought a shirt in four minutes.
The normal thing is for the two events, regardless of their
relation to time by the clock, by the stars, by the seasons,
physiological time, or even psychologically perceived time,
to be reported simply as Event A and Event B. For this
reason it is useful to model the linguistic handling of time
in a non-metric fashion, which suggests a topology.

        Suppose the relationship of events in a narrative
fits Figure 3.1. Here Event A is followed by B; which is
followed in turn by both C and D. D continues after C
finishes, and also keeps going through the end of E. F
and G follow, simultaneous with each other. A sample
narrative with these relationships might be (A) They got up
before dawn and (B) ate breakfast together. (C) Curly rode
into town, but (D) Slim headed off to the canyon to look for
lost cattle. (E) Another cowpuncher he met at the mouth of
a draw told him he had seen a yearling farther up. (F) Slim
went after it (G) while the puncher watered his horse.

        It is also characteristic of the linguistic handling
of time that the boundaries between events are rarely clear
cut. For example, unless we are saying it in Kate, we give
no idea whether or not time elapsed between getting up (A)
and eating breakfast (B) in the example above. The only
thing that is certain is that there was a time (A) when they
were getting up and not eating breakfast, and that later
there was a time (B) when they were eating breakfast and not
getting up. This lack of interest in the transition period
is represented appropriately by a line that represents time,

⟶ time

```
--------             --------                        -------
    A                    C                               F

           --------                      ---------
              B                              E

               -------------------------------
                              D

                          ----------
                              G
```

```
█----█----█----█----█----█----█
0   1   2   3   4   5   6   7   8   9  10  11  12
```
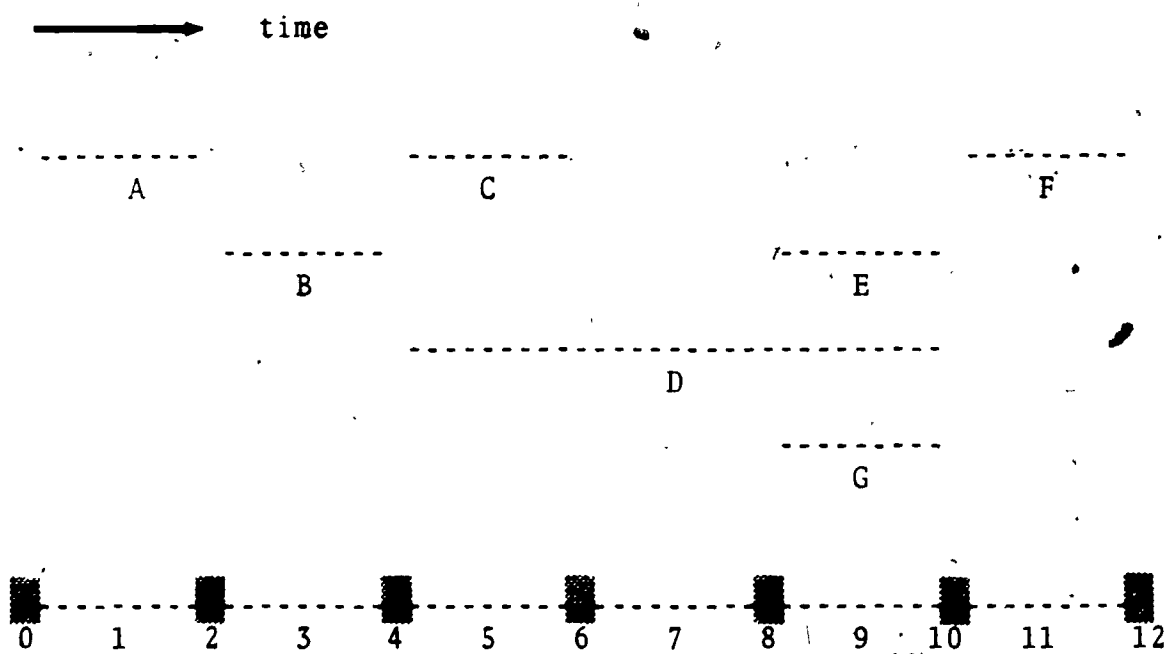
Figure 3.1. Events in time (above)
              and time base (below).

and open sets of points along that line that represent
events; open sets do not include their own boundaries.[3]

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[3]The elementary notions of topology are presented'
in Lipschutz (1965), Arnold (1962), or Mendelson (1963).
The presentation of them here is informal, but is capable
of being formalized. Technical terms used here include
open set, boundary, Hausdorff space, neighborhood, subbase,
and base.

The time line appears to be a special case of what is known
as a Hausdorff space, a kind of topological space in which
for any pair of distinct points, there are neighborhoods of
each that have no points in common.

Litteral takes the events as a subbase for the time
line topology. This means that each event that is in the
narrative is represented by an open set of points along the
time line in such a way that the finite intersections of
those open sets are a base for the topology that expresses
the linguistic organization of time. The base itself con-
sists of open sets such that each event set is a union of
sets in the base. (The intersection of two sets is the
elements that are common to both; the union of two sets is
the elements that are found in either.) By arranging the,
members of the base and the boundaries between them along
the time line, an open chain that, covers, the time line
results. It consists of open sets representing linguistically,
significant stretches of time, alternating with the boundaries,
between the open sets. From this Litteral is able to
construct an index illustrated in Figure 3.1 at the bottom.
There the open set of points associated with an event is
represented by a horizontal line and the boundary between
two events by a slash. The alternating boundary and event

segments are matched to the set of nonnegative integers
(whole numbers) in such a way that even numbers match bound-
aries and odd numbers match events. There is also an even
number α that denotes an undefined beginning boundary
instead of 0 and a corresponding even number ω that denotes
an undefined terminating boundary. The index of an event is
an ordered pair (a,b) with a less than b; a tells when on
the time index line the event begins and b tells when it
ends. For events that span more than one segment of the
time base, (a,b) refers to the simple chain that begins with
segment a and ends with segment b, including all the inter-
vening event spans and boundaries. Thus in Figure 3.1 the
index of event A is $(1,1)$, since A begins and ends with the
same time segment. Similarly the other single span indexes
are $B(3,3)$, $C(5,5)$, $E(9,9)$, $F(11,11)$, and $G(11,11)$. The
index of D; however, is $(5,9)$; D spans the times of C and
E and the boundary time between them as well.

This representation of time makes it possible to
distinguish simultaneous actions like F and G from partially
simultaneous actions like C and D or D and E with a precision
that is something other than the precision of a stopwatch.
Neither is it the precision of a frame counter on a motion
picture projector, as was used in analyzing films of the
assassination of John F. Kennedy. It is rather the kind of
precision that is appropriate to the linguistic system
itself. Furthermore, the distinction Litteral makes between
events as open sets of points on the time line and the
boundaries of those sets is valuable for making explicit
certain kinds of aspectual distinctions like inchoative
('starting to...') and completive ('finishing...'). By
providing a framework for time that is related directly to
the referential system of language itself, Litteral has also

made it simpler to talk about apparent referential incon-
gruities such as My wife$_{n,\omega}$ was born$_{n-k,n-k}$ in San Diego$_{\alpha,\omega}$,
in which obviously the person being talked about at time $\underline{n}$
was not the speaker's wife at the time she was born, $\underline{n-k}$,
but became his wife later.

Another kind of sequencing between events is what
Ronald Huisman (ms) has characterized as tight vs. loose.
In Angaataha, a language of the Eastern Highlands of New
Guinea, Huisman reports two kinds of sequencing, temporal
and logical, each of which may be tight or loose. Tight
temporal sequencing corresponds rather well to the Kâte
notion of contiguity in time, while loose temporal sequencing
corresponds to Kâte lapse. In logical sequencing, however,
tight sequence implies that one event has another as its
direct consequence, while loose sequence implies that one
event has a continuing effect that persists indefinitely,
or at least to the point of influencing a second event even
when that second event cannot be considered its direct
consequence. The notion of a persisting effect is also
present in the perfect tenses of ancient Greek.

The time sequence of a narrative is rarely expressed
as though events simply followed one another like beads on
a string. Instead, there is usually a subgrouping of
events into smaller sequences; then each of these smaller
sequences as a unit is put into sequence with other sub-
sequences of the same kind. Time structuring can be carried
on through several levels of partitioning, so that the
grouping of subsequences of events can be diagrammed as a
tree. Over the whole narrative, however, a single index
in Litteral's sense can be constructed. The moving finger
of time moves on from event to event; yet from another point
of view the events themselves are clustered together.

In asserting this independence of temporal sequences
from the hierarchical grouping of linguistic elements,
Litteral has, I think rightly, eliminated my earlier notion
(ms) of temporal sequence as one of several rhetorical
relations (see Chapter 6). Instead he has moved temporal
sequence into the area of reference. The clumping together
of a series of events which are also in temporal sequence
with one another turns out to be based on other organizing
factors which probably are part of the rhetorical structure.
For example, all the events that take place at a particular
setting tend to be treated as a unit, as Glock and I found
to be the case in Saramaccan (1970). When rhetorical
organization and temporal sequence match, the order of
elements can be considered normal or unmarked.

Another grouping principle that partitions events in
a single temporal sequence could be called the principle of
common orientation. A sequence of events is distinguished
from a later part of the same time sequence in that all the
actions in each part involve uniform relations among their
participants. Alton Becker speaks of this as one of the
bases of paragraphing in English (1966). Sheffler finds
something similar but more explicitly communicated in
Munduruku (ms). There the patient or goal of an action is
singled out at the beginning of each paragraph. It defines
the characteristic orientation of the participants for that
paragraph, in that the rest of the actions in the paragraph
are taken implicitly as directed toward that patient or
goal. Uniformity of participant orientation will be dis-
cussed in detail in Chapter 9, and is related to thematiza-
tion, discussed in Chapter 11.

Besides common setting and common orientation, some
event sequences appear to be grouped together by the way

they relate to plot structures. I had questioned earlier
(Grimes and Glock 1970) whether plot structure was actually
part of linguistics at all. I suggested it might rather be
a perceptual template whereby a discourse could be rendered
interesting by casting the more prominent referents in it
in standard roles like hero and villain. June Austing (ms)
finds in Omie, however, that the particle iae, which marks
the beginning of temporal subsequences that are grouped
together for other reasons, also begins temporal subsequences
that do not appear to be grouped together in any of those
ways, but do correspond to boundaries between Propp's basic
plot elements (1958). This would suggest that plot struc-
ture is a factor in the linguistic behavior of Omie speakers
and must therefore be considered as interacting with the
time sequencing system of the language. The high predict-
ability of the Labov-Waletzky suspension point, at which
English speakers (but not Saramaccan speakers, I notice)
inject evaluative comments or questions into a narrative
between the complication and the resolution (1967, also
discussed in Section 5 of this chapter), also argues in
favor of plot as a semantic complex rather than as a
principle of referential selection alone.

Not all events, of course, are in sequence.
Language is capable of communicating forked action[4] as in

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[4]The term forked is taken from the terminology used
to describe simultaneous computational processes in the
design of multiprocessing systems. It is matched by joined,
which refers to the point in the total sequence where all
the simultaneous processes are known to have been completed
so that another computational step that depends upon their
joint results can then proceed.

you take the high road and I'll take the low road, which is
not a description of a sequence of events. Forked actions
may be related only by their simultaneity, or they may be
different sides of a single complex action as in the dog
chased the fleeing cat or they got the car started by him
pulling and her pushing.

In other cases a language may mark certain stretches
within which sequence is irrelevant. Janet Briggs cites
part of an Ayoré text (ms) in which many things happen
during a raid on a jungle encampment. Although all the
events, which involve several individuals fighting and others
getting killed or being captured, took place in some real
sequence, they are explicitly marked in Ayoré by the particle
jéque as part of a single hurly-burly in which attention to
sequence, normally a prominent part of discourse structure,
is suspended.

Ayoré is also typical of many languages in that the
sequence of telling normally has to parallel the sequence of
happening. Even when the sequence is suspended, the
suspension covers an interval of time whose relative posi-
tion in relation to other events is kept in the right order.
Other languages, however, make use of a set of signals that
allows events to be told out of order. The Odyssey, for
example, consists of a series of flashbacks from a rather
short main sequence of events; but it is constructed in such
a way that there is no doubt about where each episode fits
into the whole. True flashbacks are part of the main
sequence of events but are told out of order. They are
distinct from narrative subsequences that are told in an
explanatory fashion without being in the main stream of
events (Section 4).

2. PARTICIPANTS

The information that identifies the participants in
an event 'not only links participants to events, but also
works within a cohesive system to link one mention of a
participant with other mentions of the same participant. It,
obeys rules of its own in addition to combining with event
information.

There may be a distinction in language between
participants and props. Certainly what Little Red Riding
Hood's mother put in her basket has a different relation
to the tale than Little Red Riding Hood herself does. On
the other hand, it does not seem to be a simple matter to
distinguish participants from props. One could suggest
that the animate objects that are involved in actions are
the participants and the inanimate ones the props; but this
does not square with such things as Propp's observation
that the helper in a plot, who assists the hero to attain
his goal, is inanimate as often as animate (1958). Many
other texts also have the form of a folk tale without
necessarily intending to be one. In a considerable amount
of scientific writing the hero, the author, slays a dragon,
either ignorance in general or the bumbling of former
investigators, by means of a helper, a second order differ-
ential equation, and thus rescues the victim, his branch
of science. In folk tales of this kind many or all of the
participants may be abstractions.

The role ranking developed in Chapter 5 gives a
scale of relative involvement in an action, from deliberate
involvement expressed by the Agent, to being acted upon in
the Patient and Instrumental, and from there on down to zero
involvement. This ranking might make it possible to divide

the things mentioned in a text into those that never appear
in the more active semantic roles, the props, and those
that do, the participants. This kind of classification
might be implicit in Wise and Lowe's partitioning of objects
into participants and props in their analysis of a Nomatsi-
ehenga text (1972).

The distinction between participants and props does
seem to be related to plot, possibly in the sense just
mentioned. That is, even if activity is not relative to the
role system as such, yet it may be relative to the plot
within which it takes place. Little Red Riding Hood's
lunch basket contents may not matter in the plot because they
never do anything; Digory's rings in C. S. Lewis's The
Magician's Nephew do matter because they transport him to
another world. On the other hand, Rosencrantz and Guilden-
stern in Hamlet have always impressed me more as props than
as participants; what they do implements what somebody else
has decided.

A fourth possibility for distinguishing between
participants and props is suggested by the study of orienta-
tion systems (Chapter 9). If we assume that changes in the
orientation of participants toward actions are systematic,
then any elements that would break the regularity of
orientation patterns if considered as participants are
probably props. This notion combines two things: the
relative involvement in a particular action that is implied
by a ranking of underlying case categories, and relative
involvement in the more comprehensive categories of plot.
Even so, it remains to be seen whether the distinction
between participants and props can ultimately be generalized
to plotless and nonsequential texts.

Reference to who and what is involved in an event is partially independent of the means used to identify each referent. For example, here are six sentences that could conceivably refer to exactly the same situation, and therefore to the same set of referents, but that use different means of identifying them.

(a) The butler it was that killed him.
(b) Someone in a tuxedo killed him.
(c) That one killed him.
(d) He killed him.
(e) He killed the prime minister.
(f) Killed him.

Throughout this book reference and identification are kept distinct. Reference has to do with who or what is being talked about. It goes back to the speaker's assumption that the hearer knows who or what is involved. Identification, on the other hand, has to do with the linguistic means that the speaker uses to communicate to the hearer who or what is involved. In (f) the doer of the deed is not identified, but he is still the doer of the deed; there is reference with no identification. The way in which identification is accomplished depends upon the circumstances, linguistic and nonlinguistic, under which reference is made.

Participants are referred to as individuals or in groups. Reference to individuals presents relatively few problems. Group reference, on the other hand, takes a number of forms. It may be individual centered, as in the President and his staff or me and my gal. It may be collective, referring to members of the group en masse: the Presidential staff, today's consumer. The group reference may imply that a further partitioning of the

group is possible: representatives of the major labor unions
invites a matching up of representatives with labor unions.
It may be undefinable, as in they say it's going to rain,
for which it is considered impertinent to ask who they are.
Some languages have a conventional they as well: they were
camping near the rapids in the absence of any more explicit
identification means 'those members of our tribe who were
alive at the time' by default.

Sometimes reference shifts during the course of a
text. There are three kinds of shift: introduction and
deletion, recombination, and scope change. Introduction and
deletion involve expanding and contracting reference by
adding or subtracting individuals from a group. For example,
in he met George at the airport. We all took the same plane.
a group (we_1) is introduced, then expanded, then the
expanded group (we_2) remains as the referent. The Jibu text
cited by Bradley (1971) involves extensive expansion and
contraction of groups.

Recombination is slightly different from expansion
and contraction. In expansion and contraction individuals
are introduced only to the extent necessary to enable them
to be incorporated into a group; once in it, they have no
further identity, like George in the preceding example.
When a group contracts, as in the Jibu example, individuals
who leave it are not referred to again, but are lost to
view. In the merging and splitting of groups, however, the
constituent subgroups of which the original group was com-
posed remain as referential entities. For example, in We
had dinner. Then we went to work on the nominations while
the children went to a basketball game the first we includes
the children while the second we does not; the children
remain as a newly defined group split off from the original

group. Thus although the original group is split, all its members remain in view, but the groups they are assigned to are not the same as in the earlier identification.

The third kind of referential shift, scope change, is like the effect of a zoom lens on a camera. It changes the area that is under attention. It may combine individuals who were formerly seen as individuals and treat them as a group, not because they start to act as a group as in the case of expansion and merger, but because they and everything else being talked about are seen in a broader perspective. Bradley's Jibu text, already mentioned, includes an example of zooming in from a more distant perspective to a closeup, with a corresponding shift in reference. She has a group of individuals, namely the bridegroom, priest, and bride, interacting as a single group with the guests at a wedding. At one point in the text, however, the guests are left out of the picture and the narrator tells what the members of the bridegroom's group say to each other. They are treated as distinct individuals for the duration of that scene only. Later the scope zooms back out to the entire wedding proceedings, and the reference picks up the bridegroom's group again as a single entity as it was before.

Where there is a shift in the spatial viewpoint from which events are reported there may also be a shift in reference. When a narrator has been speaking as though he were omniscient and knows everything that goes on both inside and outside the heads of the participants, he may shift, for example, to presenting events as a certain one of the participants sees them, or vice versa. When he shifts, what at first he had treated as reference to individuals may change to reference to groups, or one pattern of grouping may be replaced by another through merging and splitting.

Identification, or the linguistic indication of
reference, will be discussed in detail in Chapter 8. The
next paragraphs here are a preliminary sketch of identifi-
cation. The basic problems in identification are first,
establishing reference sufficiently well that the hearer is
clear about who or what is being talked about, and second,
confirming or maintaining it sufficiently well to keep the
hearer from becoming confused.

Unique reference is established, and to a certain
extent maintained, by naming in some cases (Jakobson 1957).
In others, as is often the case where naming in itself would
not be enough to fix reference adequately for the hearer,
some kind of description is used to narrow down the range of
possible referents to where the speaker thinks the hearer
can proceed on his own. Bach (1968.105), McCawley (1970.172),
Langendoen (1970.47) and Postal (1971) have discussed the
relation between grammatical forms of description and the
referential problem of keeping 'the entity that is being
described distinct from other entities. Postal (1971.13)
has discussed the fact that even single nouns used to
characterize a referent destriptively may have a time depen-
dent element. In she married the poor bachelor and made a
happy husband out of him the same individual is referred to
twice, but with two different descriptions appropriate to
two different time segments $(\alpha,1)$ and $(3,\omega)$ corresponding to
before marriage and from the time of marriage onward.

From the point of view of discourse studies the
striking thing associated with the distinction between events
and the identificational information that goes with the
participants in those events is the different grammatical
forms that are used to communicate the different kinds of

information.   Whereas events tend to be communicated by
independent verbs in most languages, transformed from
underlying predicates whose role sets include nearly anything
but the essive (Frantz 1970), identifications tend to
involve the embedding of sentences.   They also include
nouns, which may be the extreme case of embedded equative
sentences.   Essives are common in identifications, and
surface constructions of the equative and stative varieties
are characteristic of them.[5]

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   [5]This is true even in languages like those of the
Philippines where it is traditional in translation into
English to render verbs nominally: as for Bill, the hitting
of him was by John, or something of the kind.   The nonverbal
glossing of sentences in languages of this kind helps convince
the reader that he is not dealing with English, but it
rather obscures the fact that these languages also use true
equative constructions to indicate the topicalization of
units larger than the clause (in a manner parallel to
English what Bill did was to hit John).   This is discussed
further in Chapter 11.

        Identification is also maintained through the use
of anaphoric elements.   The most general of these, as pointed
out by Lakoff (ms) and Langendoen (1970), are not pronouns,
but nouns used as umbrella terms to cover a wide area of
more specific nouns.   They include nouns that are easily
recognized as generic, like thing, one, person, and idea.
They also include nouns that are generic relative to the
particular referents, like dish in All they had was chili
and apple pie.   He ate them, but the first dish gave him
nightmares.

Pronouns are the common means of maintaining identi-
fication. How efficient they are depends partly on the rich-
ness of the categories of appropriateness of reference that
are available within the pronominal system. As long as two
referents in English, for example, can be referred to by
he and she, pronouns alone are enough to maintain their
referential distinctiveness indefinitely; but if two refer-
ents both fall within the scope of he, other measures have
to be taken to keep them from becoming confused. What
things in a discourse a pronoun can refer to may be indicated
explicitly when the pronoun agrees with nouns that are used
to initiate identification of the referent. Spanish la, for
example, is used to identify many referents that are intro-
duced with nouns that end in a like cola 'tail' and mesa
'table', as well as with nouns that lack the a ending but
are conventionally treated in the same way like mano 'hand'.
The applicability of a pronoun may simply be known by
convention, as when English she is used to identify something
that was introduced with ship. In other cases neither
explicit form nor convention suffices, as in the case of
Spanish sobrecargo 'airplane cabin attendant', where la
is used if the specific attendant in question is female
and lo if male.

Inflectional reference is closely enough related to
pronouns that the two are sometimes discussed together.
From the point of view of identification, however, it is
important to notice that the categories of appropriateness
of reference for inflectional systems are, as far as I
know, never more finely divided than those of the pronouns
with which they may stand in cross reference. The inflec-
tional categories may be identical with the pronominal
categories, or the pronominal system may be richer in
distinctions than the inflectional system, but the
inflectional system probably never has more categories than
the corresponding pronouns.

Even though this section is about participants, so
far in discussing means of identification I have phrased
things almost exclusively in terms of the identification of
physical objects. The notion of identification is, of course,
much broader. It is just as appropriate to speak of identi-
fication of time spans ('then') or motions ('did so') or
directions ('there') or anything else. All these kinds of
things are identified both descriptively and anaphorically;
and even inflectional systems may index any of them.

Before leaving identification it is useful to point
out that the notion of zero or implicit identification
helps to bridge the gap between identification and reference.
There are many cases where the hearer is expected to know
who the participants are by deducing it from the context;
he is not told by any overt linguistic signal. The rules
for this kind of deduction are most important for the way
they shed light on the entire process of identification.
Like any zero element in linguistics, zero identification
must be approached with caution; there must be a way to
recover the reference from the context by rule, and there
must be no possibility that the zero identification could
contrast with its own absence (Haas 1960).

CHAPTER FOUR
NON-EVENTS IN DISCOURSE

1.   SETTING.

Where, when, and under what circumstances actions
take place constitute a separate kind of information called
setting. Setting is important in the study of discourse
not only because it characteristically involves distinctive
grammatical constructions like locatives, but also because
it is a common basis for segmentation of sequential texts
into their constituent parts.

There is a difference, not always easy to perceive,
between the setting of part of a text and the underlying
relation of an action to its surroundings that I speak of
later (5.1) as the Range role. Range is part of the
definition of certain actions; not part of the definition of
every action. For example, with the English word climb,
the surface on which the climbing is done is an essential
semantic element of the action; if it is omitted, it is
because the Range is readily deducible from the context,
never because it is irrelevant to the action. Other actions
like think and say, on the other hand, do not have Range as
part of their semantics. For example, if a person uses
climb without making clear the surface on which the climbing
was done, and a hearer asks him about it, he will get
either a definite answer like on the roof or under the
porch, or he will elicit the equally determinate I don't
know, implying that it was legitimate for the hearer to have
asked. But if asked where a particular event of thinking
or saying took place, the speaker is more likely to come
back with a bewildered huh? and the kind of look is his

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eyes that shows he has no idea what the hearer is talking
about, because Range is not part of the normal semantics of
those actions. On the other hand, a true setting is capable
of extending over a sequence of actions and is independent
of the semantics of any of them. It can also apply to
predicates that do not have Range as part of their meaning:
While I was in Phoenix I had a great idea.

        It is tricky to distinguish setting from the Range
rble. Either may, for example, take the form of a locative
such as a prepositional phrase. One test that seems to work
in a number of languages is the test of separability.
Setting information can be paraphrased naturally in the form
of a when, where, or while clause. It may even take the form
of a separate sentence or block of sentences: Finally we
arrived in London. It was ten in the morning. Range
information, on the other hand, cannot be separated. When
he was at the street corner, he climbed does not give the
Range for climb; it is necessary to make Range part of the
same clause, as in he climbed the flagpole or he climbed
the path that led from there.

        Settings in space are frequently distinguished from
settings in time. All languages probably have the capability
for defining a spatial setting by description, as in Gilbert
and Sullivan's On a tree by a river a little tom-tit ...
Maxakalí of Brazil (Popovich 1967) characteristically goes
heavy on describing spatial reference. Up to half of each
paragraph may be taken up with telling exactly where the
action of that paragraph took place. Other languages give
descriptions of spatial setting more sparingly. Especially
in societies in which the physical environment is well
known and most reported actions take place within it, a few
cryptic and conventional reference points seem to be all

the definition of setting that is normally needed. In Cora
of Mexico, for example, each dwelling area has the physical
features surrounding it catalogued through conventional
combinations of verbal affixes, so that more explicit
description of the setting is necessary only in talking
about actions that take place outside that part of the tribal
area (Ambrose McMahon, personal communication). In Anggor
(S. Litteral ms) the factors of location of high ground,
direction of river flow, and the sun's path combine in the
selection of locatives in a way that gives almost a precut
definition of the setting, changed only if those properties
are radically different in the settings of some actions.

Spatial settings may be redefined during the course
of a text either by describing where each new setting is
located, as seems normal for English, or by a relative
redefinition that takes the most recent setting as its
point of departure. Maxakalí does this frequently. When
a setting is established in one paragraph, certain other
points are described that are related to the setting yet
outside of it. The paragraph may end with one of the
participants going to one of those peripheral points. A
new paragraph that begins with an indication that the setting
is to be changed may then pick up the peripheral point at
which the action of the last paragraph ended and make that
into the setting for the next paragraph. Oksapmin (H.
Lawrence ms) does something similar (except that the shifting
of setting does not seem to be related so closely to the
division of the text into paragraphs as in Maxakali). A
setting is established; then verbs of motion like 'go' and
'come back' are used for excursions out from that setting
and back. If a 'go' is not matched by a corresponding 'come
back', however, then a following 'arrive' or similar verb

establishes a new setting. On the other hand, a 'come back'
or 'return' that is not preceded by a corresponding 'go'
switches the setting back to whatever setting was defined
at the beginning of the text.

Huichol of Mexico defines spatial setting either by
motion from one place to another, like Oksapmin but on a
much less extensive scale, or by a more static characteriza-
tion of one area in its relation to the area where earlier
actions occurred. For example, 'up on top' is used to
characterize an area on top of a mountain range as it is
seen from the perspective of previous actions that took
place in a valley below. From then on all reference to the
setting is from the new perspective of the top of the
mountains until that in turn is changed.

The scope of a spatial setting may be broad or
narrow. Oksapmin, for example, defines as the first setting
of a narrative the place where the person stood from whose
spatial viewpoint the story is told. The setting also
includes his immediate surroundings. The extent of those
surroundings, however, may take in as little as part of a
room, or it may include part of a country. There is no
explicit indication of where the boundaries of an Oksapmin
setting lie; it must be deduced by the hearer from the
speaker's pattern of use of prefixes like ma 'here', or
more exactly 'within the setting area', as opposed to a-
'there, outside the setting area'.

Settings in time are equally important. Temporal
setting, like spatial setting, must be distinguished from
the temporal properties inherent in a particular action.
Whether an action followed its predecessor immediately or
after a lapse, whether it is viewed as having an extension
in time or taking place as a single unit, whether its effects

are said to persist, all are independent of the general time
framework of the narrative, just as the place where an
action or series of actions happens is independent of those
elements of location (Range) that are an integral part of
the definition of the action.

        Descriptive definition of time is usually with
reference to some kind of calendric system. The term is
used broadly to include not only explicit calendric refer-
ences like Longfellow's 'Twas the eighteenth of April in
seventy-five ... but also references to uncodified but
culturally recognized temporal events like at the first new
moon after the solstice or when the corn developed its
second joint or even the Old Testament's at the time when
kings go forth to battle.

        Another kind of time definition makes use of
reference to memorable events. This can shade off into a
calendric system of its own in the case of dynasties or
definitions of years by outstanding events as in the Kiowa
calendar (Mariott 1945). St. Luke, for example, places the
birth of Christ 'in the days of Herod' (1:5) as a general
time, then more specifically 'in those days ... the first
enrollment, when Quirinius was governor of Syria' (2:1-2).
One episode of a Bororo story (Crowell ms) begins with
'John fished', not as an event in the story, which is about
jaguars killing cattle, but as a means of placing the
episode both in time and in space with reference to John's
fishing trip. The notion of a mythological 'dream time'
or 'in the time of the ancestors', common in Australia and
New Guinea, is a still different kind of establishment of
setting, not too different from the English once upon a
time.

As with spatial settings, temporal settings within
a narrative can be established relative to earlier temporal
settings. This is usually done by mentioning the amount of
time that intervened between the earlier group of actions and
the later group: 'after three years', 'the next day',
'when the next chief came to power'. The time may also be
established with reference to the time of telling: 'last
year ... within the last three weeks, however'. Aging of
the participants serves as a mechanism for establishing
settings in other cases: 'Now he was three years older',
'by the time she got married', 'later, after he had stepped
down from his heavier responsibilities'.

McLeod (ms) suggests that the psychological atmosphere
of a series of events may be treated linguistically in a
fashion parallel to spatial and temporal setting. This may
be so, or it may be that that kind of information is more
parallel to the explanatory background information discussed
in the next section. So far I have not seen enough examples
of it in any language to be able to decide how it works.

2. BACKGROUND

Some of the information in narratives is not part of
the narratives themselves, but stands outside them and
clarifies them. Events, participants, and settings are
normally the primary components of narrative, while explana-
tions and comments about what happens have a secondary role
that may even be reflected in the use of distinctive gram-
matical patterns, as it is in Munduruku (Sheffler ms).

On the other hand, in nonsequential texts, explana-
tory information may itself form the backbone of the text,

and narrative sequences may be used to illustrate it. Thus
it appears that the narrative oriented model used to begin
the analysis of discourses points toward a generalized model
that can be used for more than just narratives. In the
generalized model of kinds of infcrmation in discourse,
there is no need to single out'one kind, events, as the one
we expect to be the central thread of the discourse. Other .
kinds of information may be made the central thread instead.

        Much of the secondary infgrmation that is used to
clarify a narrative (called background for convenience,
even though the term may be misleading for nonsequential
texts in which the background type of information could be
thought of as in the foreground) has an explicitly logical
form of structure, frequently tied together with words like
because and therefore. It is an attempt to explain. It
has this explanatory form even when the logic in it is
invalid or when it falls short of really explaining what it
purports to explain. As far as natural language is concerned,
it seems enough that the sound of logic be there, though the
substance and structure of logic be nowhere in sight. The
logic may be shaky and the premises flawed, but it is
usually accepted anyway as long as it is case in the right
linguistic mold.

        Explanations, either as secondary parts of narratives
or as the central theme of texts, often involve premises
that the speaker feels are generally accepted and therefore
leaves unsaid. Sometimes what is unstated brings consternation
to the linguist from another culture who is not yet in a
position to supply the missing pieces of the argument. Even
Aristotle, however, recognized the legitimate use of enthymemes,
or partially filled in arguments, rather than complete

arguments (Rhet. 2:22), and pointed out that the speaker
might have to contend with sham enthymemes (Rhet. 2:24).

The handling of the structure of explanations
actually sheds light on the depth and sensitivity of the
speaker's estimate of who the hearer is; because even in
cultures where nearly all parts of an explanation or argu-
ment are assumed, if the hearer makes it sufficiently clear
that he does not follow, most speakers will restate themselves
in an attempt to make up for his lack of understanding.
(This is less likely to hold in relatively homogeneous and
isolated cultures, where many of life's activities depend
upon the assumption that everyone shares the same fund of
information. In these cultures only the more imaginative
may entertain readily the thought that an outsider might not
automatically share all the assumptions that the members of
the society hold. The pervasiveness of this belief about
the pervasiveness of belief could in fact serve as a defini-
tion of ethnocentrism.)

A speaker may leave out elements of an explanation,
whether it is given as background to a narrative or whether
it is the main thread of a text, in several ways. He may,
for example, state premises in his argument that fill the
role of premises in the structure but that are far removed
from the real premises, either because they are superficial
derivatives of them or because the real premises on which
the argument is based are not palatable to the hearer.

One recalls, for example, the President's statement
justifying his 1971 economic freeze on the grounds that it
had been called forth by the activities of international

monetary speculators. This, if carried deeper, would point
back to the premise that the economy of a large nation can
be controlled by a small number of individuals on another
continent; but few of the people who saw the statement
delivered on television would have accepted that premise.
On the other hand, it would have been politically disastrous
to admit as a reason for the action the fact that the country's
economy had been allowed to work itself into a state that
was noncompetitive on the international market, which one
suspects is much closer to the real reason for the action.
So a premise of sorts was dropped into the necessary slot in
the argument.

Another type of gap in explanations is found in the
connection made between premises and conclusions. In the
European tradition there is a long history of trying to make
connections of this kind clear. The tradition of topoi, or
familiar skeleton arguments, goes back to Aristotle (Rhet.
2:23). In other traditions there are modes of connection
which, though not necessarily acceptable in the European
tradition, are taken as valid. An example is the so-called
'rabbinical logic' in which the presence of a word in the
Biblical text is taken as proof for an argument in which
that word is involved. St. Matthew, for example (2:15),
cites Hosea 11:1, 'I called my son out of Egypt', as a
prophecy referring to Christ's time in Egypt, even though in
Hosea's own context it is related to Israel's turning away
from God.

In general explanations tend to contain as little
information and have as uncomplex a structure as the speaker
thinks he can get away with. The belief system that is

being invoked may be rich and intricate, and the number of
steps when fully traced out may be great; but unless a speaker
foresees some misunderstanding on the part of the hearer he
can be counted on to hit only enough of the high spots to
suggest the general nature of his argument. He appears to
count on the hearer to have most of the elements and
relations of the argument already present in his own head, so
that touching a few points is sufficient to activate the whole
logical structure.

Certain events are told as background, not as part
of the event sequence. In Saramaccan, for example, a story
that deals with a canoe trip that ended when the canoe
captized in the rapids goes back at the very point of the
disaster to a series of events that took place before the
the trip started: The man of the family that made the trip
had brought in cassava, his wife had grated it and cooked
it into bread, and they had made bundles of it to take with
them. As far as I can tell the reason this sequence of
events is put into the story is not because those events
should have been told before as part of the main sequence
and were overlooked, but rather because the speaker wanted
the hearer to understand the magnitude of the loss when the
canoe overturned. So he gives details on the labor that
went into producing the load (Grimes and Glock 1970).
Aristotle (Rhet. 1:2) likens these exemplary events to steps
of an induction in logic; they make a case by proceeding
from instances, not principles.

Sequences of events that are told as background are
in a sense embedded narratives, though the ones I have
noticed so far are much less rich in structure than the
main narratives on which they are supposed to shed light.

Their structure is, however, their own, independent of the
structure of the main narrative. Furthermore, there is no
requirement that the participants in the embedded narrative
be connected with the participants in the main narrative.
In the Saramaccan case they are the same. In parables, which
are a special kind of narrative used to shed light on some-
thing else, there is usually no connection of participants
with those of the main story except by analogy. In between
lies, for example, St. Matthew's account of the death of
John the Baptist. It is brought in as an explanation of the
apprehensions of King Herod about Jesus, who Herod thought
must be John come back to life. Then the supporting
narrative goes back to the death of John and brings in
Herod's brother Philip and his former wife Herodias, whom
Herod had married, together with Herodias's daughter (14:1-12).
None of the events involved in this peripheral story touch
the main narrative directly. They rather serve to explain
an attitude reported in the main narrative. Only two of
the participants, Herod and John, appear in both narratives.

Antecedent events occur in a time framework that is
removed from that of the main narrative. In terms of
Litteral's time index (ms) they are removed from the main
time of the narrative by a constant factor k, so that an
antecedent event sequence that relates to time segment n
in the main narrative has indices of the form $n - k + i$, where
$i = 1,3,5,\ldots$, for the events within it. This time displace-
ment is signalled overtly in some languages. English, for
example, uses the past perfect tense to point out a displace-
ment: in the preceding paragraph I find I wrote whom Herod
had married for just this reason.

Another kind of background involves an event sequence
used to explain things, but displaced forward in time rather
than backward. Such foreshadowing has a displaced index of
the form n + k + i. Again, the internal structure and cast
of participants of such a displaced event sequence are
essentially independent of the structure and cast of the
main sequence.

Foreshadowing has two uses in narrative. First, it
explains the main events by stating a sequence of events
that might result later from the main action. Second, it
may fill in the semantic content of part of the main event
sequence well before the events are actually asserted to
have taken place. This is seen in narrative sequences like
He married Cindy so that he could drain her fortune off to
a numbered account in a Swiss bank. When he attempted to do
so, however, Dapper Dan got wind of it and advised Cindy to
switch to municipal bonds over which her husband had no con-
trol. Here drain her fortune off is not asserted as having
happened; the actual assertion of an event is attempted to
do so, with the semantic content of do so already specified.
In the same way switch to municipal bonds is a foreshadowing
in terms of the time base of the event advise. As we leave
this touching drama we are not told whether Cindy ever got to
her stock broker in time. It is of such interplay between
foreshadowing and assertion that soap operas are woven; but
the pattern also has its serious uses.

Foreshadowing shades off into collateral information,
discussed in Section 4 of this chapter. There is a slight
difference in emphasis between the two, but which is
intended may not always be clear. Foreshadowing, like other
background information, intends to explain something, whereas

collateral information intends to lay out a range of possible
actions so as to set off the main action by contrast with
the other alternatives to it.

3. EVALUATIONS

Not only do speakers report the state of the world;
they tell how they feel about it. The expression of internal
feelings in relation to other kinds of information (which
is not the same as a cognitive reporting of what one's
internal feelings are) involves specific modes of linguis-
tic expression, as we shall see.

The reactions that are expressed come from several
sources. The most obvious is the speaker's own evaluation:
Here comes that blackguard Jones not only identifies Jones
and sets the action in the speaker's immediate environment,
but also lets the hearer know what the speaker thinks of
Jones. Aristotle (Rhet. 3:2) points out the difference
between 'Orestes the matricide' and 'Orestes the avenger of
his sire', depending on what the speaker thinks of Orestes.

Often evaluations are imputed to the hearer or to
other people referred to in the discourse. Any participant
in a discourse can be assumed to have his own opinions of
things, and the speaker may feel that he knows what those
opinions are sufficiently well to include them. There is,
however, a restriction that is pointed out in manuals of
short story writing (Meredith and Fitzgerald 1963). The
speaker, or the person from whose spatial viewpoint a story
is being told, must have established himself as being in a
position to know what a particular character thinks before
he can say what that character thinks, or else a viewpoint

constraint is violated. Only under the assumption of an
omniscient viewpoint can the speaker dart in and out of
people's minds with impunity; otherwise the speaker must
connect any evaluation that he gives with the possibility
that he can give it legitimately. (As a linguist I do not
yet see how to incorporate this kind of viewpoint constraint
into linguistic theory directly. It is either an involved
kind of referential constraint, or else stands clear outside
linguistics.)

Another kind of evaluation is that of the culture
within which the speaker is speaking, the conventions of the
society he represents. The ancient Greek chorus brought
society's expectations of what was proper into the play, and
weighed the actions of the participants less against the
personal factors that influenced their choices than against
the factors that all agreed should have been decisive. In
some ways the omniscient viewer of modern story telling
represents this function.

Not everything in a discourse has to be evaluated.
For this reason it is useful to recognize the scope of an
evaluative statement. It may be global, embracing an entire
discourse; if so, it is likely to be found either at the
beginning as an introductory statement that tells why the
rest of the discourse is being told, or at the end as a
moral to the story or the tag line to a fable. Frequently
the evaluation is local, as when one participant tells
another that as far as he was concerned what they just did
was the wrong thing to have done. Labov and Waletzky (1967)
discuss the use of evaluative statements of this kind.
They occur between the complication part of a narrative and

the resolution. An evaluation, which may evaluate the
immediately preceding event or the entire situation of the
story or even the situation of the telling of the story,
'suspends the flow of events at a structurally 'significant
break.

Bolinger (1968) discusses the influence of evalua-
tions on choice of words. Not only is one man's meat
another man's poison, but what is prudence for one is coward-
ice for another, what is beautiful design for one is garish-
ness for another, and what one calls love another sees as
sentimentality. It all depends on how you look at it,
literally. Thus there are words that always represent Good
Things, such as loyal, true, Mother, and the whole list that
includes 'Remember the Maine, Plymouth Rock, and the Golden
Rule' in the song 'Trouble' from Meredith Willson's The
Music Man. On the other hand, there are words that always
represent Bad Things: ghastly, traitor, decay. Other words
float in between, depending partly on the temper of the
times (the chorus function) and partly on the immediate
context. Charles Osgood (Osgood, Suci, and Tannenbaum 1957)
shows how the evaluative component of words can be represented,
and how it shifts in terms of varying psychological states.

Labov and Waletzky point out that evaluative infor-
mation is the most mobile part of a narrative in that it
can occur nearly anywhere without changing the meaning of
the narrative as a whole. They apply a permutation or mobility
test that consists of interchanging pairs of clauses and
finding which interchanges destroy the meaning of a narrative
and which merely produce what subjects react to as another
version of the 'same' narrative. Evaluative clauses charac-
teristically can be moved anywhere within the text. Event

clauses, however, cannot be taken out of their text order
without making a different story, unless the reordering is
heavily marked. Other types of clauses can move over a
limited range. This capability of evaluative clauses to
occur anywhere makes the consistency with which they appear
at the Labov-Waletzky suspension point (between the
complication and the resolution) all the more interesting.

Evaluations bring the hearer more closely into the
narration; they communicate information about feelings to
him that goes beyond the bare cognitive structure of what
happened or what deduction is to be made. In conversations,
and even in monologues, the hearer may be pressed to give
his own evaluation: What do you think? How do you suppose
they took that?

Evaluations may also be an aim of the discourse. By
communicating how the speaker feels, there is often an
implication that the hearer ought to adopt the same attitude.
Stories with a moral are characteristically of this kind.
Where the evaluation itself is the punch line, the discourse
is hortatory in form (Longacre 1968), and may take the form
'Because these things happened, you should feel as I do', or
'Because this principle holds for the reasons I give, here
is the attitude you must take'. A story with a moral is
thus likely to be an exhortation within which there is
embedded a narrative.

Evaluative information shades off into background
information or even into setting in cases where it serves to
build up the psychological tone of a series of events. Here
the general form would be 'Because people felt this way,
or because I think things were exceptionally good, this is
what happened as a consequence'. Evaluations also mark the

development and release of tension in a plot, giving cues
as to how the action affects the participants' view of things
and vice versa.

4.   COLLATERAL

Some information in a narrative, instead of telling.
what did happen, tells what did not happen. It ranges over
possible events, and in so doing sets off what actually does
happen against what might have happened.'

For example, in the Saramaccan text referred to in
Section 2, the narrator breaks the sequence of events after
the capsizing of the canoe: 'The canoe overturned. The
father did not die. The mother did not die. The children
did not die. Instead, they all escaped to land.' By telling
what did not happen to the participants, he throws the signi-
ficant event of their escape into relief. Aristotle lists
'describing a thing in terms of what it is not' as a device
for impressiveness of style; he attributes its recognition
to Antimachus (Rhet. 3:6).

The idea of collateral information was brought to my
attention by William Labov in a lecture which as far as I
know remains unpublished. He also pointed out that
collateral information (his term for it was 'comparators')
is not restricted to things that might have taken place but
did not. Collateral information also fits into projected
time. Questions, for example, raise alternatives that
might or might not turn out to be so; future tense forms
predict actions that might or might not take place;
imperatives direct people to do things that might or might
not be accomplished. All of these have the effect of

setting up alternatives.' Later in the text it is usually.
made clear which of the alternatives happens. At that
point the fact that alternate possibilities were mentioned
earlier makes what actually does happen stand out in
sharper relief than if it were told without collateral.

Collateral information, simply stated, relates
non-events to events. By providing a range of non-events
that might take place, it heightens the significance of the
real events.

Collateral information also has the effect of
anticipating content when, with reference to projected time,
a number of alternatives are spelled out in advance as
possibilities. If one of these alternatives is the real
one, much of what has to be said about it has already been
said ahead of time. In this respect collateral information
is not very different from foreshadowing.

I have already mentioned some of the grammatical
forms that are characteristic of collateral information.
These are closely related to mood (15.3). The rest of this
section gives details concerning collateral forms.

Negation, first of all, is almost always collateral,
whether its temporal reference is in accomplished time or in
projected time. Events that do not take place have signifi-
cance only in relation to what does happen. Events about
which it is predicted that they will not happen still may
or may not take place; if they do not, then we are concerned
with what else might happen in their place; while if they do
happen contrary to the prediction, the fact that a negative
prediction was made about them contributes to the highlighting
effect..

Adversatives are a form of negation. Some imply
parallel but disjoint action: <u>They</u> <u>brought</u> <u>pickles</u> <u>but</u> <u>we</u>
<u>brought</u> <u>mustard</u> conveys implicitly <u>they</u> <u>did</u> <u>not</u> <u>bring</u>
<u>mustard</u> <u>and</u> <u>we</u> <u>did</u> <u>not</u> <u>bring</u> <u>pickles</u>. Other adversatives
imply that the speaker assumes the hearer to have inferred
an event that is plausible but that did not in fact happen.
<u>We</u> <u>arrived</u> <u>late</u> <u>but</u> <u>were</u> <u>received</u> <u>immediately</u> implies <u>I</u>, <u>the</u>
<u>speaker</u>, <u>think</u> <u>that</u> <u>you</u>, <u>the</u> <u>hearer</u>, <u>must</u> <u>expect</u> <u>that</u> <u>if</u> <u>we</u>
<u>were</u> <u>to</u> <u>arrive</u> <u>late</u> <u>the</u> <u>logical</u> <u>thing</u> <u>would</u> <u>be</u> <u>for</u> <u>our</u>
<u>reception</u> <u>to</u> <u>be</u> <u>postponed</u>. <u>Contrary</u> <u>to</u> <u>your</u> <u>expectation</u>, <u>we</u>
<u>were</u> <u>received</u> <u>immediately</u>.

Other negatives are not really collateral, but are
hidden forms of positive statements. St. Paul's 'we do not
want you to be ignorant' in 1 Thessalonians 4:13 is of this
type; the meaning is 'we want you to realize' followed by
the content of what the readers ought to know. Here the
negative has apparently been raised into the main clause
'we want X' from the embedded 'you should not fail to realize',
in which the Greek negative <u>ouk</u> is cancelled by the privative
<u>a-</u> of <u>agnoeîn</u> to give the whole meaning equivalent to 'you
should realize', incorporated in the stylistic device known
as litotes. The same privative enters into the composition
of lexical items that denote certain events. These events
are named by negation from some other word that also denotes
an event, but of a different (not necessarily antithetical)
kind: for example, <u>athetéō</u> 'disregard' from <u>títhēmi</u>
'establish'. Negatives of this kind are not necessarily
collateral.

Questions are another grammatical form used for
indicating collateral information. They have been discussed
frequently in the linguistic literature with regard to the

information they presuppose or assume as over against what
they inquire about (Fillmore and Langendoen 1971). When did
John get here? presupposes that John did get here, and that
the area of uncertainty is restricted to the time of his
arrival. When did you stop beating your wife? is more
complex; it assumes first that there was a time when you.
beat your wife, and second that there was a time after which
you no longer beat her, and the question is directed toward
ascertaining that time. The presuppositions in a question
are almost like conditions laid down by the speaker for the
hearer to give an acceptable answer. If the hearer accepts.
the presuppositions, then he can give the missing information
that is requested; if not, he is in a bind.

The questions that are most characteristically
collateral are polar or yes-no questions, since they
invariably impose alternatives. Will Batman escape?
presupposes an exclusive disjunction, a pair of alternatives
only one of which is acceptable: Either Batman will
escape or Batman will not escape; please tell me which is the
case. In English, a positive answer like yes or He will
asserts the positively phrased alternative even if the
question is stated using the negative member of the pair:
Won't Batman escape? expresses the same disjunction, differing
from the positive question principally in communicating in
the latter case that the speaker already has his own opinion,
but that he is interested in getting the hearer's reaction.[6]

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[6]Some languages, including New Guinea Pidgin and
Huichol, have a different rationale for phrasing answers to
polar questions. The answer in English depends upon
selecting the positive or negative member of the implied
disjunction, which explains why disjunctions that are not

formed around truth values as such have to be answered in
other ways (<u>yes</u>, for example, is not an acceptable answer
for <u>will you have coffee or tea?</u>). These other languages,
however, answer with agreement or disagreement with the
member of the disjunction that is given in the question.
<u>Bai Batman i ranawe</u>, <u>o nogat?</u> is equivalent in Pidgin to
the English example, and states the positive member of the
pair, so that <u>yes</u> 'agreed' is equivalent to English <u>yes</u> and
<u>nogat</u> 'I disagree' as an answer is equivalent to English <u>no</u>.
But if the question is negative, <u>bai Batman i no ranawe</u>, <u>o</u>
<u>nogat?</u>, then <u>yes</u> 'agreed' means that the person giving the
answer does not expect him to escape, and <u>nogat</u> 'I disagree
with the member of the disjunction that was expressed in
the question' means that he does expect him to escape. See
Litteral 1969.

In any case, polar questions express at least a
pair of alternatives. The alternatives remain open regard-
less of the answer given to them; just because at one point
in a discourse one participant expresses an opinion that
Batman will escape does not mean that he will. Polar
questions are therefore a useful device for introducing more
than one alternative at once. Even nonpolar questions with
<u>who</u>, <u>what</u>, <u>when</u>, <u>where</u>, <u>how</u>, <u>why</u>, and the like may carry the
implication, for a particular discourse, that the person
asking the question thinks that there may be more than one
possible answer. Which regularly presupposes a set of
alternatives from which a choice is to be made. And the use
of alternatives as a means of highlighting the particular
alternative that actually takes place is central to the idea
of collateral information.

Rhetorical questions form a special case in the study of discourse. These are questions for which the answer is implied by regular rules, so that none is actually given in the text, or else for which the same person who asks the question immediately supplies the answer. A well known example of the first is at the climax of Patrick Henry's speech of March 1775 to the Virginia Convention: Is life so dear, or peace so sweet, as to be purchased at the price of chains and slavery? The second is found in St. Paul's Epistle to the Romans 6:1-2: 'Shall we keep on doing wrong, so that we may be treated all the more graciously? Of course not!'

Some languages, including Huichol, make use of rhetorical questions combined with answers, but never of unanswered rhetorical questions. There may be certain points in discourse at which rhetorical questions are permitted, whereas they do not fit elsewhere; this is the case in Munduruku (Sheffler ms).

Insofar as rhetorical questions introduce information that is different from what actually turns out to be the case, they can be considered devices for introducing collateral information. This is the case with both the examples given above. Patrick Henry is not inquiring into the prospects of a life in chains and slavery; he is setting up a foil against which his use of liberty in the next sentence stands out more than it would if he had simply stood up and said I want liberty. St. Paul brings up the possibility of keeping on doing wrong only for the purpose of making his negation of that plan of action stronger.

In Sarangani Manobo, however (DuBois ms), what looks like a rhetorical question is used in a way that is

distinctly not collateral, but identificational. (Note the
use of negation as collateral in the preceding sentence.)
The rhetorical question is followed immediately by its
answer, and is used to keep track of participants when a
group is split. One of DuBois's examples illustrates this:
'Then Ken's wife disembarked and the two of them including
Lauretta stayed there at the airstrip. Where were we? We
rode the airplane first, the three of us. Then the airplane
flew going to Davao. Where were they, Lauretta and Ken's
wife? They waited for the airplane to return.'

        Given the world the way it is, the prediction of an
event is no guarantee that the event will take place.
Instead, a prediction states one of several things that might
happen and at the same time expresses the opinion of the
predictor that that is what will happen, not something else.
Other possible happenings may also be predicted or brought
into the discourse by means of other collateral expressions.
The information about what actually does happen, then, may
take several forms. If none of the collateral expressions
gave what really happened as one of the alternatives, it
must be stated as an event. 'If it was mentioned ahead of
time, however, then it is not necessary to repeat any of the
content that formed part of the collateral mentioned, but
only to affirm which of the possibilities took place. They
were going to Florida for vacation, but ended up camping in
the Adirondacks illustrates an event not introduced as
collateral; They were either going to go to Florida for
vacation or camp in the Adirondacks. They did the latter
illustrates the introduction in collateral of the same
event, followed by an anaphoric reference to its mention
that gives it the status of a true event.

Predictions come in several degrees of relative
firmness: total expectation, probable, possible, and on
the negative side, unlikely and impossible predictions.
From the point of view of using predictions as collateral
information that points out alternatives in discourse, it
seems irrelevant which of the possible modalities is used
unless there is a dual sense to collaterality: perhaps the
event alternative and whether it actually happened or not
are one component, and the expectation of the person making
the prediction and his feeling in relation to that when
the event happens are a second component.

Quotations often give collateral information. An
act of speaking in a discourse is, of course, an event in
itself; but what is said is usually not. If it has the form
of a denial, a question, or a prediction, the three regular
forms of collateral I have just discussed, then it is
clearly collateral: She said, "He isn't in the house."
But when we unlocked the door, there he was uses a negative
quotation to add significance by contrast to there he was.
She said, "Are you looking for Gorham?" When we unlocked
the door, there was Simmons uses a question to suggest a
possible find that turns out to be different from the actual
find. She said, "You will find him in the second room on
the right." When we unlocked the door, there he was sets up
a prediction in the quotation.

Not all quotations give collateral information.
Quotations may also express background information and
evaluations: The doctor said she should watch her weight.
So she went on a diet explains going on a diet by quoting
(indirectly in this case) what the doctor said. As the
rocket curved toward orbit, the reporter whispered,
"Beautiful!" conveys an evaluation.

As Longacre points out, furthermore, there are
certain kinds of discourse in which there is a standing
assumption that what is quoted is what happened. This
dialogue form of discourse can be considered a specialized
version of narrative; it is sequentially oriented in
accomplished time. It could be considered the default or
unmarked case of collateral quotation, in which only one
possibility for each event is introduced via quotation,
and since there are no alternatives, what is mentioned is
tacitly taken to be what happened: The canoe glided
between the islands. "Closer in to the shore." "Far
enough?" "Hold her there while I see if I can raise
anyone." No answer from the forest. "Try again." "Hello
the island!" "Marlowe!" "Take her ashore." Radio drama
without narration developed this kind of discourse into an
art form; even stage and television plays depend heavily
on it, and it is a popular form of oral narration in many
languages.

CHAPTER FIVE

THE SPEAKER AND HEARER IN DISCOURSE

Both the form and the content of any discourse are influenced by who is speaking and who is listening. The speaker-hearer-situation factors can be represented in linguistic theory via the notion of performative information.

The idea is this (Austin 1962, Searle 1969, Ross 1970): in any language there are certain words called performatives which under the right conditions denote actions that are performed in the uttering of the words themselves. When the minister says I pronounce you man and wife a couple are thereby made man and wife; if I say I bet you ten dollars the Cubs will win you can hold me to it if they lose.

There are, however, restrictions on performative utterances. They must be in the first person and the present tense; the minister cannot say to someone else you pronounce them man and wife and thereby perform a marriage, and if he says I pronounced you man and wife he is reminiscing, not exercising his office. There are also extra-linguistic conditions that are required to make those performatives stick; in American society, for example, a bartender or a ship captain on shore or a seminary student or an elementary school pupil can say I pronounce you man and wife, but only a minister of religion, a justice of the peace, or a ship captain on the high seas can say it in a way that performs the action. In the same way, the people it is addressed to must be of different sexes, above a certain age, and not married to anyone else.

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Certain performatives are quite common and are free
of special limitations on their use. I hereby order you
to turn left and numerous equivalent forms are one kind
that is so common that there is a grammatical shorthand for
it: turn left, an imperative. Another large family of
performatives can be paraphrased into a form like that of
Somebody stole the garlic. I hereby request you to identify
that somebody. The grammatical shorthand for this is the
question form Who stole the garlic? By far the largest
family of performatives fit the pattern I hereby inform you
that your back porch just fell off, for which the conven-
tional shorthand is the declarative Your back porch just
fell off. Behind even simple utterances, then, it is possible
to say that there stands a performative element that recog-
nizes the identity of the speaker, the hearer, and the
situation within which they are communicating.

The recognition of implicit performatives behind
commands, questions, and statements, as well as explicit
performatives, paves the way for linguistic handling of
situational factors in discourse. Specifically, it gives a
place in linguistic analysis for what are conventionally
known as deictic (pointing) elements like 'this' and 'that'
or 'here' and 'there', and for person categories like 'me'
and 'you'. Assuming a performative behind every discourse,
and even behind parts of discourses in addition to the global
performative, makes it possible to talk about persons, time,
and place in a way that would be very hard to explain other-
wise within the bounds of a theory of language.

In the case of persons (and for that matter, objects)
the recognition of the speaker-hearer axis in communication
is the basis for assignment of person categories. This seems

trivial or obvious for a discourse that has a single perfor-
mative like 'I, the speaker, hereby inform you, the hearer,
that ...' that dominates it; there the person speaking is
always I and the person spoken to is always you. Pike and
Lowe, however, have probed one class of discourses in which
this simple assignment is not possible (1969, see also
Lowe 1969).

Their case involves a situation in which three
individuals, call them Al, Bill, and Charlie, or A, B, and
C, are talking. Suppose that A is speaking to B; then A is
I and B is you and C is he. But now suppose A says to B,
"You said to him, 'I see you.'" The last instance of I does
not refer to A but to B, and the last instance of you does
not refer to B but to C, even though the whole thing is
spoken by A to B. The key to understanding the person
assignment is that every instance of direct discourse intro-
duces a new, limited, and local performative in which the
person who utters the direct quotation is I and his hearer
is you, regardless of what other performative dominates.
Lowe presents a theorem based on the theory of finite
permutation groups, which as far as I can tell predicts all
cases and works for all languages, for any depth of
embedding of performatives via direct quotations.

Performatives are pertinent in the identification of
participants in other cases besides direct discourse, but in
a different way. In direct discourse person assignments are
derived by Lowe's Theorem from the immediately dominating
performative. The assignment of persons in that performa-
tive is taken from the one that dominates it, and so on up
the ladder until the highest is reached. Everywhere else,
however, including indirect discourse and statements, person

assignments are taken directly from the most remote performative; that is, the one that dominates the entire discourse and therefore reflects the actual speech situation. This shows up if we paraphrase the example just given in such a way as to show the performative elements:

(a) I, the author, hereby inform you, the reader, that
(b) ⟵A said to B, quote (new performative)
(c) ⟵ "I, A, hereby inform you, B, that
(d) ⟵ you, B, said to him, C, quote (new performative)
(e) ⟵ "I, B, hereby inform you, C, that
(f) ⟵ I, B, see you, C.'"

Any paraphrase of this that uses only indirect discourse goes into the third person and is highly ambiguous in English even with full intonation, because neither A nor B nor C is the author or the reader: A said to B that he said to him that he saw him. With explicit identification of C there is less ambiguity, but still enough to inhibit communication: A said to B that he said to C that he saw him.

In addition to the identifications that relate to performatives, there are other less easily recognizable factors whose effects can be seen in the outer form of language and that find their place in the conceptual scheme of linguistics by virtue of their relation to performatives. Here, first of all, is where the speaker's entire image of himself as a person is accessible to the linguistic system.[1] Here also is the place in linguistic structure for

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[1]As Aristotle says, 'the speaker ... must give the right impression of himself' (Rhet. 2:1). He also points out constraints between who the speaker is and what he says: 'In a young man, uttering maxims is--like telling stories--

unbecoming, and to use them in a realm where one lacks
experience is stupid and boorish' (Rhet. 2:21).

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registering the speaker's assessment of who the hearer is,
what he knows, how he feels, and what he might do as a result
of what the speaker says. Both images may change during
the course of speech as a result of feedback signals from
the hearer to the speaker; but it is in terms of what the
speaker holds about both himself and the hearer at the
moment that he phrases what he says next.

For example, I, the author, estimate you, the
reader, to be generally informed about the field of linguis-
tics, and as a consequence I write noun phrase without
bothering to give you an explanation. I expect that you are
mildly interested in the subject of discourse and highly
interested in one or two points. Because I do not know
which of the points I am making those are, I try to say
enough on each that you can grasp what I think about it.
At the same time I try to give enough signals about the
relationships between one point and another that you can
skim anything of which all you want is the drift.

On the other hand, if I thought that you were a
high school student, required perhaps by the state board of
education to take a course in the discourse patterns of
English in order to graduate, but were really more interested
in what is going to happen at football practice, the whole
presentation would be different. I might even tell better
jokes. I would certainly leave out most of the explanations
and alternative hypotheses, and would present English
discourse structure on a take-it-or-leave-it-but-it-makes-
sense-to-take-it basis. Rather than giving only enough

examples that a motivated person can pick up one and then
supply as many as he wants of his own, I would give a range
of examples for each point and reinforce them with exercises
in which you would either have to find your own examples or
show how some new examples (called 'problems') relate to ones
already given. I would not talk about Mundurukú or Manobo
unless I thought that doing so might make something in
English easier to understand. Furthermore, my estimate of
you would not change, because the only feedback I could get
would be after I had finished writing the book and had tried
it out in the classroom.

        Aristotle notes (Rhet. 1:9) that 'whatever the quality
an audience esteems, the speaker must attribute that quality
to the object of his praise, whether the audience be Scythians,
or Spartans, or scholars'.

        The performative element not only serves to relate
persons to the discourse, but also to act as the zero point
for time reference. In terms of Litteral's time index
discussed in 3.1, the time axis of a discourse can be
represented by the real number line. Zero matches the time
the actual activity of uttering the discourse begins, the
negative part of the line matches things that happen before
then, and the positive part matches both the uttering of the
discourse itself and events in the future that are talked
about. Each event, including the uttering of the discourse
itself, would then be represented by an open set of points
on the time line, indexed as described earlier.

        English words like now, ago, and yet have explicit
reference to the relation between the time of speaking and
a time referred to. Other words are independent of this

relation; Pidgin nau, for example, even though it comes from
English now, refers in narrative to the next thing in the
sequence being narrated, not to the time of narration.

. Tense systems are defined at least partly in terms
of this correspondence between the time relations that are
inherent in what happens and the relation of the happening
to the telling. Some tense systems, like that of Halia
(Jerry Allen ms), divide this area rather fine: the Halia
past tense includes events up to and including the day before
the day on which speech takes place. The nonpast is further
divided into completive, progressive, and the intentive
aspects, which in terms of the time framework correspond to
events that took place earlier on the day of speaking,
events in progress at the time of speaking, and contemplated
events.

Relationships between the time of happening and the
time of speaking may be indicated overtly as in Halia, or
they may be established by a single time reference and then
not mentioned again. This is somewhat like the English
historical present: First he goes and finds the girl, then
he shows her the ring can be either a blow-by-blow descrip-
tion of something that is happening at the time of speaking
(visualize a detective hidden in the arras whispering into a
tape recorder) or a narration of something that happened,
say, three thousand years ago, told so as to create an air of
immediacy. Intermediate between the use of tense to index
every event for time and the total absence of time indexing
is the indexing by paragraphs reported by Dye for Bahinemo
(Longacre 1968). A dependent clause at the beginning of
each Bahinemo narrative paragraph gives the relation of the
paragraph as a whole to the time of narration; from there on
the narration of the events that take place is tenseless.

Tense displacement was mentioned in connection with
the use of antecedent events and foreshadowings for explana-
tion in 4.2. In English the past perfect forms regularly
indicate displacement out of the main time line of a discourse
into a subsidiary time line (or into a segregated section
of a single time line, more propefly): The car arrived at
ten. They had been delayed by a flash flood outside of town.
We got in and left anyway, hoping to make up the time on the
open highway. Dependent temporal clauses with nonpast
verbs, introduced with words like after, before, and while,
or independent clauses with future verbs, denote time
displacements projected into the future from the time of
speaking. Collateral forms (4.4) involving questions and
predictions regularly signal displacement into the future.

The place where an act of speech occurs is also part
of the performative information for that act of speech.
The position of speaker and hearer relative to each other,
their surroundings, and the relationships between all this
and the things they are talking about influence to a certain
extent the linguistic forms they choose.

For example, when talking about things in the
immediate speech situation, English speakers distinguish
this, something near the speaker, from that, something not
near the speaker, though possibly near the hearer. When
talking about abstractions or about things outside the speech
situation, however, the use of this and that loses its
spatial component and takes on a reference to what the speaker
has or has not said already: The point is this: you have
to forget all that has this pointing ahead to what the speaker
is about to say and that pointing back to what has already
been said (Halliday 1967b). Portuguese makes a three-way
spatial distinction: este for something near the speaker,
esse for something near the hearer, and aquele for something
relatively remote from both. Ilocano (Thomas) has four

degrees: near the speaker, near the hearer, near both, and
remote from both. In Huichol there is a complex system of
reference either to the surface of the earth as seen by the
speaker or to position on the body of a human or animal
(Grimes 1964).

Bacairí (Wheatley ms) makes a four-way distinction
in pronouns that depends partly upon how they are related
to the situation of speaking. mira 'this one' refers only
to someone relatively close to the speaker; in the case of
an embedded performative, it can be used with reference to
the speaker who uttered the embedded performative. maca
when defined in relation to the performative refers to
someone far away but in sight of the speaker, while auaca
refers to someone closer. Overlapping the performative
oriented pronouns, however, is a discourse oriented system
that makes no reference to the situation of speaking, but
only to what is being said. At the end of this scale is
inara 'he', which can refer only to someone who has already
been identified verbally. maca and auaca also play a part
in this system; but when they are used in relation to the
verbal context rather than the context of the act of speaking
.maca refers to a participant who has been placed in focus,[2]

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[2]In terms of Chapters 19 and 21, Wheatley's focus
would probably be considered a kind of high level theme.

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in the center of the stage as it were, and auaca refers to
any other nonfocal participant. (There are also inanimate
and athematic counterparts for the four mentioned here,
which are animate and thematic.) Some discourses have a
point of confusion that comes about like this: First
maca 'he, far' and auaca 'he, near' are used to introduce

participants that are present in the situation of speaking.
Then the nearer participant is taken as focal with reference
to the discourse, and the system shifts so that the speaker
is using maca 'he, focal' for the nearer character and
auaca 'he, nonfocal' for the more distant one. This shift
from situational to textual reference gives the effect of a
flip in pronoun reference in the middle of a text.

In Oksapmin (Helen Lawrence ms) events are told
relative to a setting. This setting may be defined by where
the speaker is located as he is speaking, or it may be
defined by where somebody who reported the scene to the
speaker was located when he observed it. In either case the
setting has an imaginary boundary: the walls of a room,
the rim of a valley, the bounds of a village, the shores of
the island of New Guinea. This boundary is never made
explicit. The use of words like matai 'here' and atai
'there', moh 'this one' and oh 'that one', masoh 'along
here' and asoh 'along there', however, is always split with
reference to that boundary, so that the proximal words (the
ones that begin with m-) refer to locations inside the
boundary and their distal counterparts refer to locations
outside the boundary. The hearer is left to deduce where
the boundary is. English near/far seem to be distinguished
in a similar way. Bierwisch (1967) has discussed a number
of relative factors of this kind in reference.

In addition to position relative to the speaker and
hearer, some languages distinguish motion relative to the
speaker and hearer. These motions may involve a reference
surface in addition to the position of the speaker and
hearer themselves, as in the Anggor distinction between

motion upstream from the speaker, downstream from the speaker,
down a declivity from the speaker, or across a stream from
the speaker (Shirley Litteral ms).

The properties of English go and come when used in
relation to speaker and hearer have been discussed by
Fillmore (1968). It seems to be a quirk of English that
come not only implies motion in the direction of the speaker,
as in come here, but also motion in the direction of the
hearer, as in I'm coming to your side of the room. Further-
more, in the case of projected time, the motion is not
necessarily in terms of where the speaker and the hearer
are at the time of speaking, but may be in terms of where
either the speaker or the hearer expects to be at the time
of the projected action: I'll come over to your house on
Tuesday implying that the speaker expects to find the
hearer home, or Come to the park for supper, implying that
the speaker expects to already be in the park.

In Saramaccan Glock and I found that the distribution
of verbs meaning 'come' and 'go' (1970) permitted me to
identify where Glock had recorded one text. kam 'come'
always implies motion in the direction of the speaker, while
go 'go' is used for motion in any other direction. Every
kam in the text but one pointed toward the city of Paramaribo,
which is outside the Saramaccan area but is where the
recording was in fact made. The exception involved a local
performative in which one participant sent a message request-
ing his brother to kam to where he was when he sent the
message, so that that instance fit the pattern defined by
the performative as well.

Pull and push, bring and take, and get and put seem
to parallel come and go not only in English but in other
languages. In a number of languages of the Philippines
(Hettick ms. for example) the stems for 'bring' and 'take'
are the same, as are the stems for 'get' and 'put'; but
the possibilities for taking grammatical focus markers
differ. In terms of semantic roles (Chapter 8) verbs of
the 'bring' variety uniformly fit a pattern of acquisition
verbs, in which the Agent moves a Patient toward himself
as Goal; while their 'take' counterparts involve the same
stems potentially inflected to show that the Agent moves a
Patient away from himself as Source; the Agent may move
with the Patient, as in the case of verbs for 'carry', or
the Patient may move away without the Agent, as in 'throw'.
The 'get' and 'put' set, in addition, take on perfective or
resultative meanings that link them respectively with 'have'
and 'be'.

Some languages link expressions of time to expres-
sions of motion in terms of the performative. Paul Freyberg
(personal communication) has called to my attention the
repetition in New Guinea Pidgin of i kam i kam i kam 'on
and on he comes' or i go i go i go 'on and on he goes' in
a temporal sense. The repeated forms follow the main verb
in a verb phrase. They come in an aspect position that can
also be filled by stap 'continue' and pinis 'complete'.
I kam i kam (repetition is part of the expression, but the
particular number of repetitions is more like an iconic
representation of extent, with more repetitions for more
time) in the aspect slot refers to the time of an earlier
event that is extended toward the time of speaking, while
i go i go refers to the same extension from the point of
view of a participant in the action and the time of
happening.

Both Huichol and ancient Greek seem to conceptualize
time linguistically in terms of a hillside on which the
speaker stands. In Greek the past is uphill (<u>ana</u>) and the
future downhill (<u>kata</u>). In Huichol, on the other hand,
future time is uphill from the speaker and past time down-
hill. Some Huichol time words, furthermore, have the form
of verbal words with directional prefixes appropriate to a
hillside perspective. For time ahead, for example, the
usual words are <u>?uza+?áa</u> 'tomorrow'; <u>waaríe</u> 'day after
tomorrow', <u>?aayei+mána</u> 'the day after the day after tomorrow,
three days hence', the verb-like <u>ranuti+?áayéi+mána</u> 'up to
the top of the day after the day after tomorrow, four days
hence', and <u>zei mána+yaarícíe</u> 'on one time unit ahead, five
days hence'. The analogous series in the past is <u>tákái</u>
'yesterday', <u>?aatu</u> 'day before yesterday', the verb-like
<u>ranuka+?áatu</u> 'down behind the day before yesterday, three
days ago', and <u>zei ?áatú+yaari+cíe</u> 'on one time unit behind,
four days ago'.

CHAPTER SIX

KINDS OF INFORMATION IN DISCOURSE

1. A WORK SHEET

The idea of different kinds of information in a
text is more easily put to use if there can be a display of
text that lays out each kind of information in a way that
can be assimilated at a glance. Figure 6.1 is the skeleton
of such a display. It is a development of the diagrams
used by Gleason and Cromack. Mickey Stout developed a
horizontal version of it which she fastened at eye level
around the walls of a room to display an entire text. The
current form was worked out by Robert C. Thurman, who used
it in his study of Chuave (ms).

The vertical columns on the chart correspond to the
various kinds of information distinguished in texts:
events, identification, setting, background (which to save
space includes evaluations), collateral, and performative.
To keep the chart from being crowded, I use the convention
that information of a particular kind is written beginning
under the corresponding heading, but the rest of the infor-
mation may be carried as far to the right as needed; this is
more convenient than trying to keep everything within narrow
vertical columns. The parallel vertical lines are for the
participants, one line per participant. For each event a
line is drawn from the lexical elements that represent the
event to the vertical lines that represent the participants
in the event. Where identifications are given for the
participants, lines are drawn from the other side to show
which identification belongs with which participant.

Event .   Identification Setting Background Collateral Performative
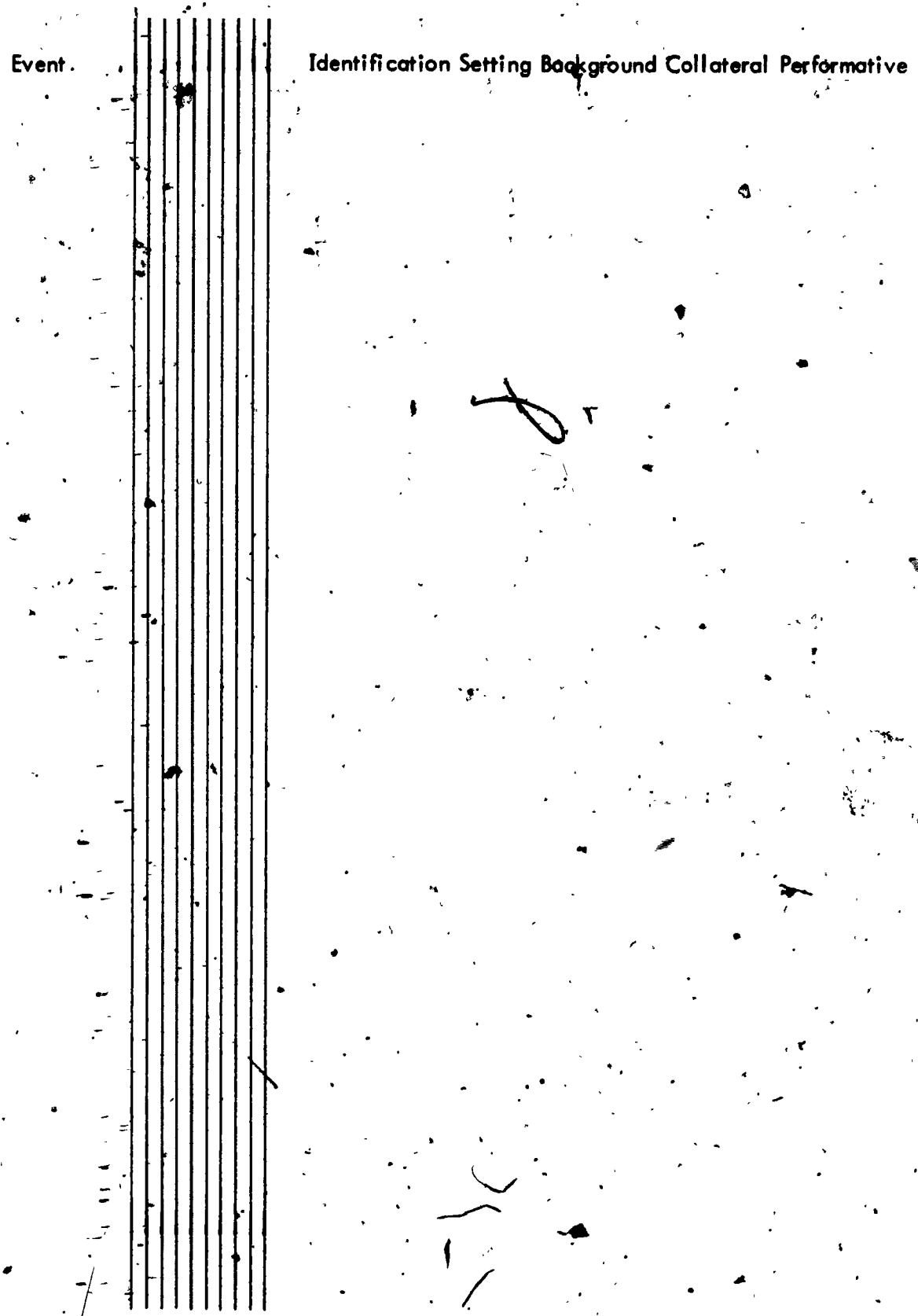
Figure 6.1.   A blank Thurman chart.

The most comfortable working format is to match a
Thurman chart with a page of text. The text is written out,
double spaced, at about one clause per line ██████ clauses
require more than one line, and one may not be able to decide
what a clause is until after the analysis is finished; but
in general the clause is a convenient chunk to work with. The
text page is fastened to the Thurman chart with the text on
the left and the chart on the right, as in Figure 6.2.
Then the information from each clause is copied into the
appropriate place on the chart. If there seems to be no
place on the chart that is appropriate for some piece of the
clause, as sometimes happens in the case of connectives,
that information is put in one of the margins of the chart
as a residue.

I have taken for illustration a narrative in English,
the opening sentences of C. S. Lewis's Out of the Silent
Planet. The first clauses appear on the left in Figure 6.2.
On the Thurman chart on the right of Figure 6.2 the events
in this section of the narrative are copied opposite the
clauses they come from, and each event is connected to one
(the leftmost) participant line to indicate that it is a
single person who stuffed his map into his pocket (2);
settled his pack on his shoulders (3), stepped out (4), and
set out at once (10). If other participants were involved
in the events, each of them would be connected to a separate
participant line.

Figure 6.3 takes the chart one step farther. Here
the identificational material connected with each event is
added and connected up to show reference. (Here, since there
is but one participant on stage, the connections are
obvious; but where there are two or more participants this
is not always so.) The participant is first brought onto
the scene as the Pedestrian (2). In the next two clauses,
which represent a tightly knit sequence of actions that could

1. ▓▓▓ drops of the thundershower had hardly
   ceased falling

2. when the Pedestrian stuffed his map into his pocket,

3. settled his pack more comfortably on his tired
   shoulders,

4. and stepped out from the shelter of a large
   chestnut-tree into the middle of the road.

5. A violent yellow sunset was pouring through a rift
   in the clouds to westward,

6. but straight ahead over the hills the sky was
   the colour of dark slate.

7. Every tree and blade of grass was dripping,

8. and the road shone like a river.

9. The Pedestrian wasted no time on the landscape

10. but set out at once with the determined stride
    of a good walker

11. who has lately realized that he will have to walk
    farther than he intended.

12. That, indeed, was his situation.

13. If he had chosen to look back,

14. which he did not,

15. he could have seen the spire of Much Nadderby,

16. and, seeing it ...

Figure 6.2a. Text written out by clauses.
   C. S. Lewis, Out of the silent planet, Page 1

Event   Identification Setting Background Collateral Performative

stuffed map
  into pocket
settled pack
  on shoulders

stepped out

set out
at once.

Figure 6.2b.   Thurman chart
  with events.

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Event   Identification Setting Background Collateral Performative

stuffed map ─ the Pedestrian
  into pocket   his ... his
settled pack ─ ∅ ... his ... his
  on shoulders

stepped out ─ ∅

          The Pedestrian

set out ─ ∅
at once

his
he
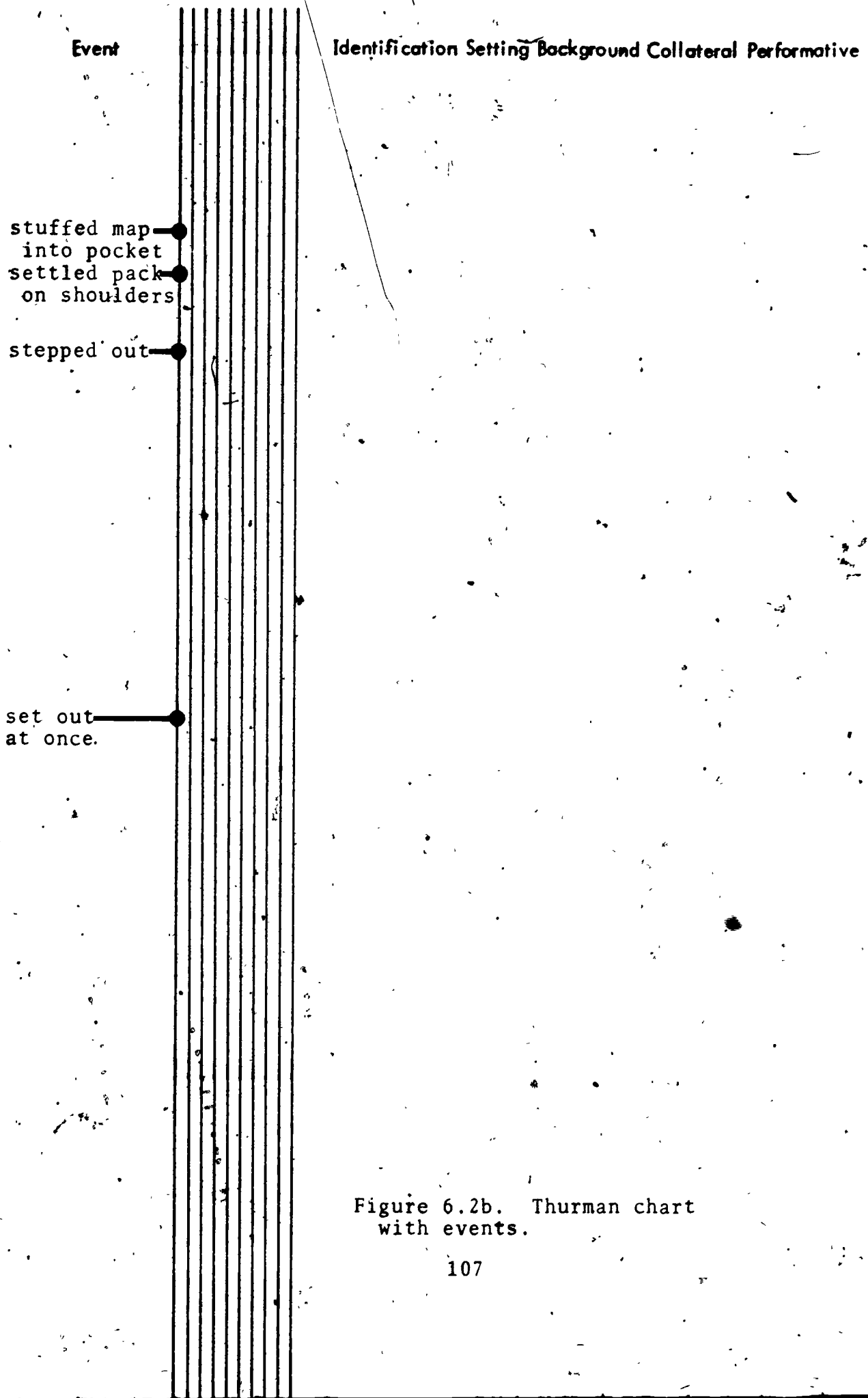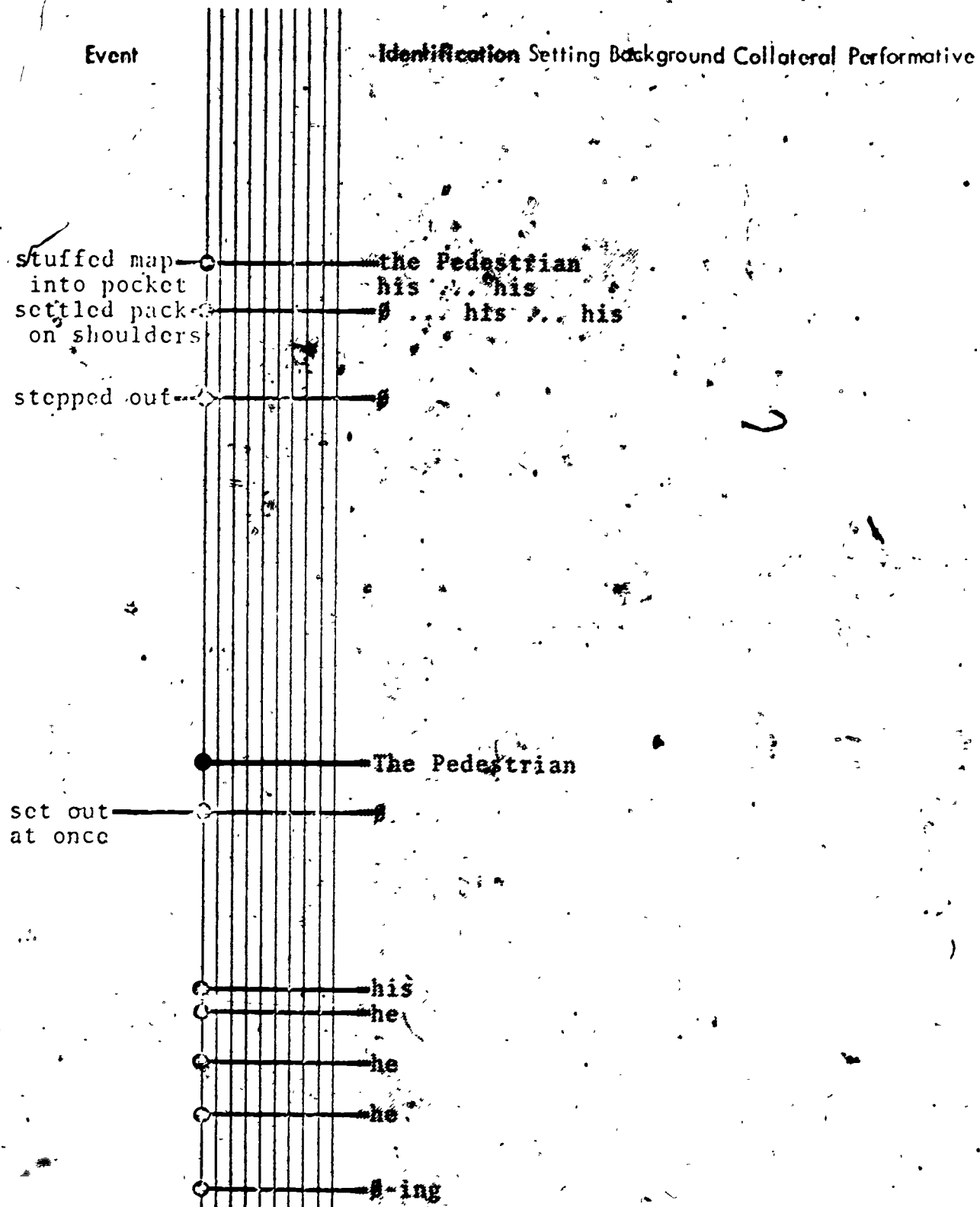he
he
∅-ing

Figure 6.3.   Identification,
     one participant.

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be taken as aspects of a single action, he is not identified
at all as the doer of the actions, but is only mentioned
indirectly by his (3). The Pedestrian is repeated in 9,
after a scenic interlude, in an identification that spans
the event in 10 as well as 9 by means of the conjunction but,
in 10. In non-events 12 through 15 the participant is
identified by he and his, but in 16, even though he is the
one who would have done the seeing, he is not identified
explicitly, but only implicitly through the agreement of
the participial construction.

Figure 6.4 adds setting information. Many narratives
begin with nothing but setting and identification and get
down to the business of events only after a few hundred words
of the other. Here, however, events are interspersed with
setting from the start: The last drops of the thundershower
had hardly ceased falling when ... (1), ... from the shelter
of a large chestnut-tree into the middle of the road (4),
A violent yellow sunset was pouring through a rift in the
clouds to westward (5), but straight ahead over the hills
the sky was the colour of dark slate (6), Every tree and
blade of grass was dripping (7), and the road shone like a
river (8). The village name Much Nadderby (15), though part
of a collateral section, is secondarily part of the setting
system as well.

Figure 6.4 also includes background information.
A bit of minor background in 3 tells how the Pedestrian
felt as the scene opened: more comfortably suggests that
his pack was less than maximally comfortable, and tired
explains the basis for his subsequent thoughts about the
hospitality of Much Nadderby. Sentence 12 refers to the same
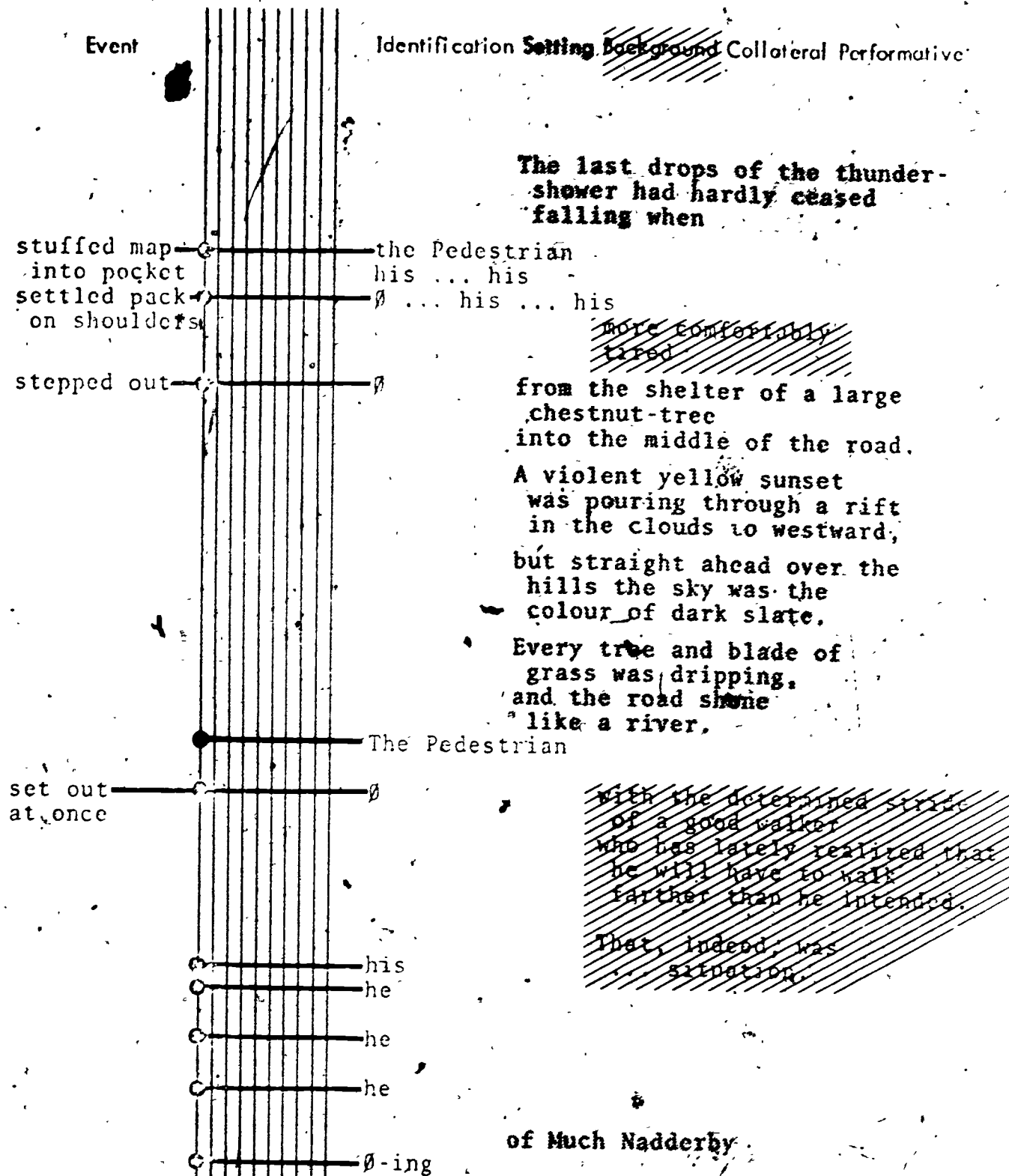feeling anaphorically in That, indeed, was his situation,

Event   Identification **Setting** //Background// Collateral Performative

                                                  **The last drops of the thunder-
                                                   shower had hardly ceased
                                                   falling when**

stuffed map ─○───────── the Pedestrian
 into pocket   his ... his
settled pack ─)───────── ∅ ... his ... his
 on shoulders   //more comfortably
                                             tired//

stepped out ─(───────── ∅   **from the shelter of a large
                                        chestnut-tree
                                        into the middle of the road.**

                                      **A violent yellow sunset
                                       was pouring through a rift
                                       in the clouds to westward,**

                                      **but straight ahead over the
                                       hills the sky was the
                                       colour of dark slate.**

                                      **Every tree and blade of
                                       grass was dripping,
                                       and the road shone
                                       like a river,**

                    ●───────── The Pedestrian

set out ─────○───────── ∅   //With the determined stride
at once   of a good walker
                                               who has lately realized that
                                               he will have to walk
                                               farther than he intended.//

                                               //That, indeed, was
                                                ... situation.//

             ○─────────his
             ○─────────he

             ○─────────he

             ○─────────he

                                      of Much Nadderby
             ○─────────∅-ing

                    Figure 6.4. Setting and
                     background.

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which uses the hypothetical description in 10-11 to expand
on the simple physical weariness of 3.

        The ninth clause is a classical piece of collateral.
It highlights what the Pedestrian did do by telling first
what he did not do: wasted no time on the landscape but ...
The last four clauses also tell what he did not do, and
what the consequences would have been if he had done it;
in the process information about the setting, and later
on in the passage information about background, are also
brought in almost incidentally. Figure 6.5 shows the colla-
teral information added to the chart.

        The performative information, in which the relation
of speaker to hearer (author to reader in this case) and
the speech situation (here, reading what is known to be a
work of fiction) are taken into account, does not show up
as coherent stretches, as in I am going to tell you what
happened to a friend of mine on a walking tour or Bet you
thought he would stop to admire the landscape, didn't you?,
which a less skilled raconteur might use. Instead, the
author cuts corners by forcing the reader into making many
small assumptions that project the reader more precipitously
into the scene; the narrator does not have to lay his
groundwork in the heavy footed way a trial lawyer does.
The definite article of the thundershower in 1 says,
'I know and you know what thundershower we are talking about;
so I won't delay things by telling you that one took place.'
The Pedestrian (2), the road (4), the clouds to westward (5),
and the hills (6) manipulate the definite article in the
same way, treating them as already introduced and therefore
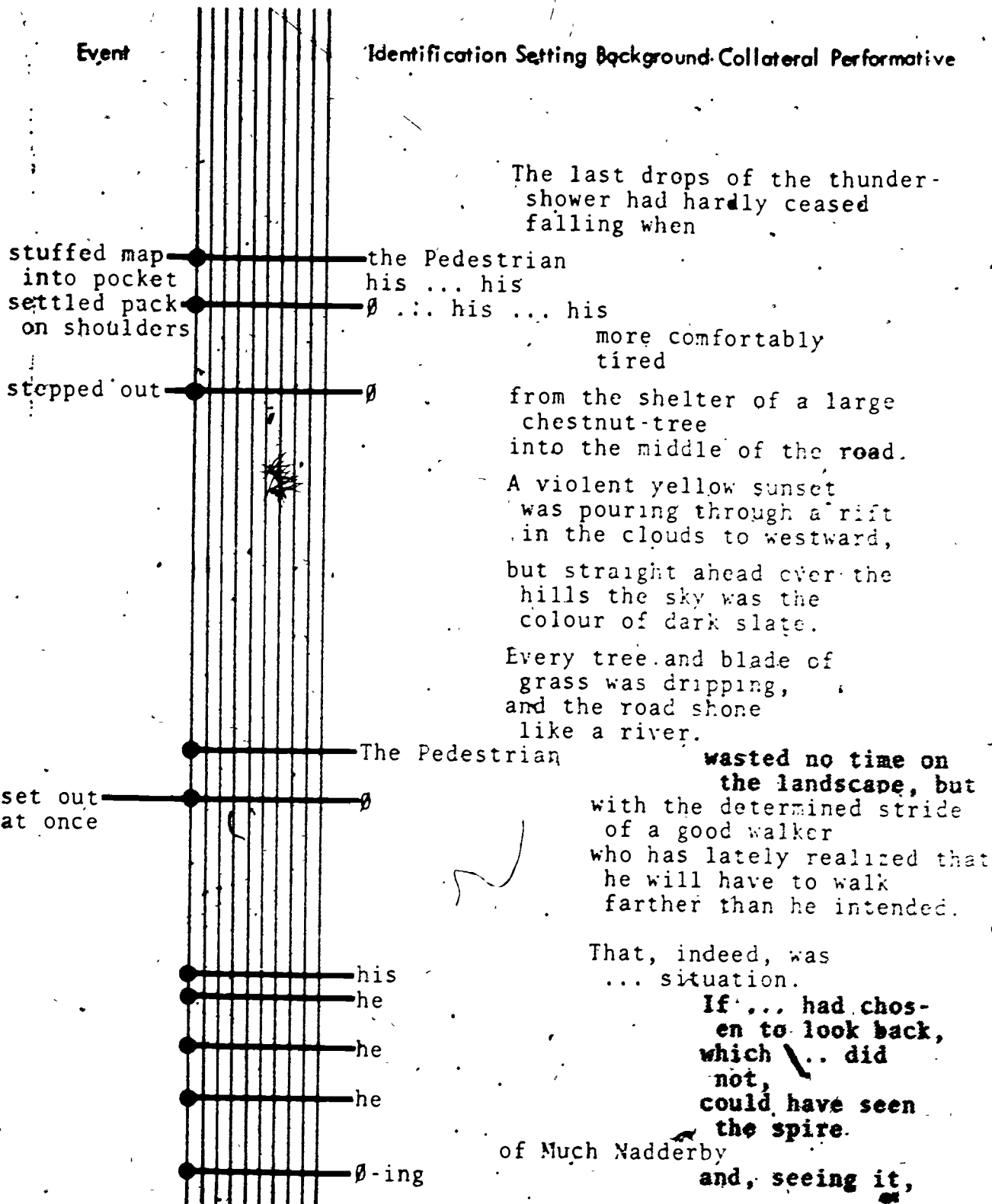needing no further preliminaries. (Pedestrian actually

Event   Identification Setting Background Collateral Performative

           The last drops of the thunder-
           shower had hardly ceased
           falling when

stuffed map — the Pedestrian
 into pocket his ... his
settled pack — $\emptyset$.:. his ... his
 on shoulders
          more comfortably
          tired

stepped out — $\emptyset$ from the shelter of a large
          chestnut-tree
          into the middle of the road.

        A violent yellow sunset
        was pouring through a rift
        in the clouds to westward,

        but straight ahead over the
        hills the sky was the
        colour of dark slate.

        Every tree and blade of
        grass was dripping,
       and the road shone
       like a river.

— The Pedestrian   wasted no time on
           the landscape, but
set out — $\emptyset$ with the determined stride
 at once   of a good walker
        who has lately realized that
        he will have to walk
        farther than he intended.

        That, indeed, was
— his   ... situation.
— he   If ... had chos-
           en to look back,
— he   which \.. did
           not,
— he   could have seen
           the spire.
        of Much Nadderby
— $\emptyset$-ing   and, seeing it,

Figure 6.5 Collateral information.

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sneaks in a good amount of information at the same time
that the is cozying up to the reader by suggesting experiences
previously shared by him and the author. If Lewis had
actually been talking to a friend about a situation they
both knew, however, he would not have had to make sure, as
he does here, that before too many paragraphs went by the
Pedestrian had been identified as a Cambridge don named
Ransom out on a holiday and had given his height, age, and
dress. The friend would have known.).

Other performative information appears under other
guises than the definite article used in places where a man
from Mars might not know what to make of it. His man (2)
and his pack (3) are also definite, and in the same way say,
"I know you remember what he looked like; just let me remind
you of a couple of details of it." Grass (7) is a mass noun
used in the same definite sense: "You remember the scene
where it took place. There was a chestnut tree beside a
road that went through a grassy place, then on into some
hills; and he was not headed west." Even the introduction
of the village is by name, direct, as though it were a
common scene for the author and the reader alike.

A few of the definite forms do not reflect the
assumed relationship between author and reader in this way.
Instead they reflect what the author assumes the reader knows
in terms of broadly shared experiences of life. The last
drops (1) are a natural part of any thundershower, a pocket
(2) is standard equipment of any pedestrian in temperate
climates (though the use of clothing plus the distinctively
English form of village name could be construed as indirect
information, "I expect you to realize that all this took
place in the English countryside"), and once you admit a

pedestrian you would be highly surprised unless he had
shoulders (3). Even the spire (15) is a standard architec-
tural characteristic of small English towns cited in litera-
ture, and therefore highly predictable.

The descriptive phrase of 10 and 11 relates to the
speaker's assessment of the hearer that is implicit in the
performative in the following sense: "You know how a good
walker goes into a determined stride if he has lately
realized that he will have to walk farther than he intended?
Let me evoke that image in connection with what happened."
On the other hand, since anything at all in the vocabulary
evokes some sort of image in the same sense, it might be
better not to lay stress here on the immediate speaker-
hearer relation, especially since the author is not suggesting
that the reader should be thinking of a particular good
walker who has revised his navigation. If it were that
particular, it would put the descriptive into the category
of an embellishment of the event itself.

The display of information given on a Thurman chart
of text is the first step toward looking for systematic
relations among parts of the text. It gets things out where
we can see them.

2.   SPAN ANALYSIS

From there it is possible to go on to another level
of abstraction further removed from the text itself, namely
the plotting of spans. Spans represent stretches of text
within which there is some kind of uniformity. Certain kinds
of uniformity have already turned out to be useful for
characterizing discourse structure in several languages, and

so are mentioned here. It would be surprising if there were
not other kinds of spans that are relevant.

If we take a page and write clause numbers down the
left hand margin corresponding to the clause numbers on the
Thurman chart, though more closely spaced, we have a frame-
work for a plot of spans in text. Each span is represented
by a vertical line, sometimes broken by a horizontal line
or interspersed by symbols. This representation makes it
possible to put many spans on a single page so that they
can be compared with one another.

Setting spans are the most obvious ones to look for
in narratives. One vertical line indicates all the actions
that take place in a single spatial location, and another
vertical line indicates all the actions that take place in
a single time sequence. A horizontal line that shows where
a span is broken is useful for matching spans across the
page. If a time index backs up to repeat a sequence, or if
there is a resetting of the time of an action in terms of
another hour or day, this starts a new time span.

It is possible to plot spans for each of the seven
distinct kinds of information in discourse that I have
discussed: events, identifications, settings, background,
evaluations, collateral, and performatives. A series of
clauses that gives a sequence of events, for example,
appears as a vertical line, while another series dedicated
to background information is represented by another line.
If seven lines are dedicated to different kinds of information,
this part of the span chart is equivalent to a compressed
version of the Thurman chart. As such it can be quite useful

in that it presents the same information in a less detailed
way that makes it comparable with still other spans.

For plotting identification within this framework,
however, it is useful to go into more detail than simply to
show which clauses are identificational. In Figure 6.3, for
example, there is a regularity about the ways in which the
identity of the sole participant is expressed. First he is
the Pedestrian; then there are four references that involve
him: his map, his pocket, his pack, and his tired shoulders.
In the next clause he is referred to but is identified only
implicitly. Then four clauses go by without any reference
to him. The next time he appears he is given an identifica-
tion that is as complete as the identification by which he
was brought on stage: again he is the Pedestrian. The
reference to him that follows in 10, like the one in 4,
lacks explicit identification. Then 12 through 15 use his
and he, followed by no identification in 16.

The pattern here is common enough in different
languages that I would label it a series of identification
spans. An identification span consists of a series of
identifications of the same participant, not necessarily in
contiguous clauses, in which no identification is stronger
than the one before it. Strength of identification is a
ranking that goes from proper names like George Washington
Carver to explicit descriptives like the mechanic who fixed
our generator in Arkansas to common nouns like the teacher
to nouns used generically like the fellow to pronouns like
him to reference without identification. The text in the
example contains three identification spans for the lone
participant. First comes the Pedestrian in 2, used somewhat

like a common noun and somewhat like a proper noun. The
rest of that span takes in the pronouns in 2 and 3 and ends
with the zero identification of 4. The second span begins
with the explicit the Pedestrian in 9 and ends with the zero
identification of 10. The third begins with the pronouns of
12 through 15 and ends with the zero identification of 16.
Where identification spans are plotted, it is wise to plot
spans for each participant on different vertical lines.

Since tense and aspect sequences seem to be closely
tied to the structure of discourse, and since they rarely
have simple explanations, spans within which all the verbs
have the same tense or the same aspect should be plotted.
When this was done for Xavánte (McLeod ms), comparing the
points where the aspect changed with the spans for each
kind of information showed that confusion in understanding
the aspect system had arisen from the fact that events
operated under one aspect system and nonevents under another.
Some of the aspectual indicators were used in both systems,
but with different values.

Another column of the span chart should be dedicated
to a problem that is so widespread in linguistic analysis
that I refer to this as the PLP column, for Pesky Little
Particle. Most languages have particles whose use seems to
be related to gluing the parts of discourses together but
which are never easy to pin down. In English they are
words like now, either, moreover, when used to relate more
than one sentence. In Huichol they include both words like
mérí kʌʌte 'well, then' and postfixes (suffix-like forms
that follow enclitics) like -ríi 'definitely'. Writing them
out in the PLP column makes it possible to compare their

Figure 6.1. A blank Thurman chart.

pattern of occurrence with the beginnings and endings of
other spans and often leads to a useful understanding of
what they are for, as for example in June Austing's study
of Omie (ms).

There are three other types of phenomena that lend
themselves to representation on a span chart, but that
cannot be described compactly enough to mention further in
this chapter. They are participant orientation sequences
(Chapter 18), placement of new information (Chapter 19),
and theme sequences at various levels (Chapter 21). By
the time they are discussed it should be obvious to the
reader how to fit them in.

Figure 6.6 is a span chart for the same text fragment
that was used as an example in the earlier part of this
section. The lines representing kinds of information are a
condensation of Figure 3.6; the plots of identification spans,
tenses, and particles are likely to be relevant for a
discourse grammar of English. As can be seen, there are
correspondences between spans. For example, the new
identification span begun in 9 follows the extensive setting
span that begins in the latter part of 4 and continues
through 8. The use of the past perfect tense in 13 and 15
goes with the collateral relationship of that string of
clauses to the rest. Other regularities are not so notice-
able from this chart alone, but would appear on examination
of a number of texts: for example, the zero identification
of the subject or agent in 3 and 4 is possibly under the
condition that the actions are closely related as phases
of a single action that begins in 2, and that no other
kinds of information such as background or collateral
clauses break the sequence. The zero identification in 10,

however, is an instance of a different pattern. Rather than
representing a tight sequence of actions, it is one side of
a collateral pair; but a similar condition to that of the
event sequence holds in that the pair cannot be interrupted
at that point by, say, background if zero identification is
used in the second member.

Other relationships are not so readily represented
on a chart of spans because they involve inflections and
function words within clauses. They can, however, be marked
on the Thurman chart itself. This is the place where anaphoric
and cataphoric relationships can be plotted out, for example.
In anaphora a pronoun or pronoun-like element has the
reference of something before it in the text. In the
sample his in 2 has been defined earlier by the Pedestrian
in the same clause, while That, indeed, was his situation
of 12 has had its semantic content fully specified by 10
and 11; both are anaphoric. Cataphora, on the other hand,
presents a reference together with a promise to identify
it later. Here's what we'll do is cataphoric; here has no
previous reference in the text (if there were a previous
reference, there or that would be the correct form to show
anaphora) and do has no content.

Thurman (ms.) has singled out two special kinds of
text relationship that deserve notice. Linkage is his name
for a particular kind of anaphoric relation, and chaining
is his name for a particular kind of cataphoric relation.
In a number of languages events must be linked to preceding
events by a repetition of those events: They went down to
the river. Having gone to the river, they entered the canoe.
Having entered the canoe, they began to paddle. Having
begun to paddle ... In a system that makes extensive use

of linkages it is the absence of a linking clause that
catches the hearer's attention; this <u>asyndeton</u> or break in
the sequence may be used to signal a change of scene or a
shift of participants or a transition to background infor-
mation or even a point of special emphasis.[1]   The most

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[1]Longacre (1968) uses the terms <u>figure</u> and <u>ground</u>
for linkage relationships. The central element or figure
in one sentence becomes the ground for the introduction of
a new figure in the next in his terminology. I find this
terminology, taken from Gestalt psychology, less than satis-
factory because of the necessity of divesting it of the
Gestalt principle that without the ground we can't perceive
the figure. That is not the point; we are dealing only
with a mechanism for linear cohesion between adjacent event
tellings.

---

striking linkage pattern I have come across is in Kayapó
(Stout and Thomson 1971), where each paragraph of a narrative
is preceded by a linking paragraph that is an almost exact
repetition of the preceding narrative paragraph.

     Chaining is cataphoric. It is the prediction of
some of the information that a following clause will contain.
It is common throughout the New Guinea highlands, though
unreported elsewhere. Joy McCarthy's 'Clause chaining in
Kanite' (1965) describes verb inflections that predict
whether the subject of the clause that follows will be the
same as the subject of the clause that contains the verb
with that inflection. If the next clause is to have a
different subject, the chaining systems of some languages
predict what person and number the new subject is going to
have, while others simply predict that there is going to be

a change. Chaining systems may go with linkage systems, so
that an event in a sequence of events may be chained forward
to the next event and at the same time may be linked backward
to the preceding event. As with linkage, breaking a chained
sequence may have special significance (Marshall Lawrence ms).

3. USE OF SURFACE CONSTRUCTIONS

        It is useful to note down on a Thurman chart just
where and for what kind of information particular grammatical constructions are used. Our grasp of grammar has
changed sufficiently in the past decade that instead of
simply saying that a language has, for example, thirty-two
clause types, we can now ask legitimately what the various
clause types are for, and by tracing their pattern of use
within a discourse we can get an answer.

        Most of the languages I have looked at so far
regularly use some kind of active clause type to report
events; that is, the instigator of the action is regularly
the grammatical subject. Passive constructions may be used
to report events, but they assert a special kind of relationship to them, discussed in Chapter 21.

        There are two kinds of phenomena frequently called
passive that should be kept distinct. The first is the kind
found in English, in which the agent who instigates an action
is expressed in a prepositional phrase and some other element
of the action is the grammatical subject, as in the ball was
hit by the batter. As Halliday (1967) points out, this
construction gives two options. One treats the agent as new
information by placing it at the end of the clause as the
nucleus of an intonation contour without using a marked form

of either the information center (Chapter 19) or the thematic
organization (Chapter 21). The other option omits the
agent: the ball was hit, which permits hit to be the new
information in the information center and makes ball the
theme; the agent either is irrelevant or is recoverable from
the context. The second kind of passive, which I distinguish
as the nonagentive, sounds like the second of the two English
patterns but has no parallel in the first. In other words,
it is incapable of stating who the Agent of the action is,
and is often used to sidestep the question of who instigated
something. Nonagentive passives are common in languages of
the western hemisphere, and no unknown in the eastern. Of
the Indo-European languages, Spanish illustrates nonagentive
semantics in one use of the impersonal se: for example,
se me pasó una desgracia en el camino 'an unfortunate thing
happened to me on the road' in circumstances where English
would say I had an accident on the road. Passives of both
kinds may be used in explanations.

Confusion of the use of passives for reporting events
with their use in explanations seems to be involved in the
justly parodied bent of some writers in the physical sciences
to try to sound objective by using the passive voice in all
their writings, with the result that they really sound as
though they were trying to evade the responsibility for their
work: The apparatus was mounted and the observation begun.
The dials were read every hour. The process was interrupted
briefly because an important connection was broken. After
the results were tabulated, it was concluded that the
Heatherington-Smedley hypothesis was capable of being modified
as had been suggested by this investigator. The tabulation
is given in Appendix B for verification by the reader.

Identificational information tends to make heavy use of equatives as well as of nouns, which there is reason to believe (Bach 1968, Frantz 1970) may represent a surface form of embedded equative. Equative constructions are also the basis for thematic identifying forms of sentences (Chapter 11) like <u>what</u> <u>this</u> country <u>needs</u> <u>is</u> <u>a</u> good <u>five</u> <u>cent</u> <u>cigar</u> and its extraposed counterpart <u>it</u> <u>is</u> <u>a</u> good <u>five</u> <u>cent</u> <u>cigar</u> <u>that</u> <u>this</u> country <u>needs</u>.

Locative constructions appear frequently in connection with setting information: <u>It</u> <u>is</u> <u>chilly</u> <u>in</u> <u>the</u> mountains <u>in</u> <u>November</u>. <u>There</u> <u>is</u> <u>a</u> <u>valley</u> there, however, where the frost always comes <u>late</u>.

Grammatical embedding of sentences within sentences is commonly used for relatively short stretches of background information or for identification: <u>The</u> <u>tickets</u> <u>for</u> <u>which</u> <u>Sam</u> <u>had</u> <u>paid</u> <u>his</u> <u>week's</u> <u>salary</u> were <u>for</u> <u>the</u> <u>wrong</u> <u>night</u> contains an embedded <u>for</u> <u>which</u> <u>he</u> <u>had</u> <u>paid</u> <u>his</u> <u>week's</u> <u>salary</u> that is on the borderline between background and identification. The embedded clause may inform the hearer about the events that led up to Sam's having the tickets; on the other hand it may distinguish those tickets from some others. The distinction in this instance is paralleled by the well known grammatical distinction between nonrestrictive and restrictive relative clauses (Thompson 1971), though I am not sure the correspondence fits all cases.

Quotative constructions in connection with collateral information have already been mentioned. Some languages also use quotations regularly as a means of presenting background information, using a verb of thinking to introduce the quotation rather than a verb of saying: 'he took the

money, thinking "she owes it to me"' is equivalent to he
took the money because she owed it to him in English.

Specific grammatical elements in a language are
seen to stand in a special relationship to discourse
structure. McLeod (ms) demonstrates the difference in
aspect systems in Xavánte of Brazil when the aspect refers to
an event and when it refers to a nonevent. In Angaataha of
New Guinea Roberta Huisman (ms) reports a difference between
primary and secondary verbal inflections in event-oriented
texts. The speaker uses primary verbs to single out events
that are important to his story in contrast to those he
puts in for detail or color using secondary inflection.
Bacairí of Brazil (Wheatley ms) makes use of a distinction
between focal and nonfocal pronouns in a kind of stage
management system, telling the hearer who is prominent in
the discourse at the moment and who is upstage. The focus
and topic system of some Philippine languages (the term
"voice" used by some authors obscures what the system is
for; see Austin 1962) is similar in that sequences of related
grammatical constructions are used to tell what a discourse
or paragraph is about and to introduce characters (Helen
Miller ms). This system has parallels in Nambiquara of
Brazil, though the specific grammatical expressions used
are not comparable on the surface (Menno Kroeker, Appendix A).

CHAPTER SEVEN
CONSTITUENCY IN DISCOURSE

Sentences and parts of sentences can be analyzed in
terms of their constituent structure. So can entire
discourses. Larger units of language are made up of smaller
units in a particular arrangement; or looked at from a
different angle, larger units can be partitioned into smaller
ones according to a particular principle.

One step in the linguistic analysis of discourse is
therefore a division of large units into their constituent
parts, labeling the parts so as to reflect how they are
related. This type of study has been carried farthest in
the area of discourse by Longacre (1968) and his associates.
It is a valuable phase of discourse study, even though it is
subject to the criticisms Postal (1964) brought up against
constituency grammars in general. One could say that
constituency analysis makes use of a universal property of
surface grammars, partitionability, which could be thought
of equally well as a property of transformational systems
that produce surface structures from deep structures. It
proceeds by successive partitioning to catalog the kinds of
elements and kinds of relationships among elements that a
language makes use of in its discourse system. What these
elements express, and what the relationships are good for,
is a distinct aspect of discourse study that I would suggest
can be investigated best when the cataloguing is done.
Constituency analysis is not the end of linguistics, but
rather a systematic way of doing the spade work.

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1.   PARTITIONING PRINCIPLES

Texts can be divided into sections in a number of ways, and the sections themselves can be further divided. The principles of partitioning involve more distinct relationships than the principles of partitioning sentences into their constituent parts. There is also no inherent ordering of the partitioning principles; for example, one text may be divided into two settings in which a single cast operates, while another may have a single setting within which a series of casts of characters play their parts.

The first kind of partition to look for in a narrative text is the one based on setting. Change of scene is usually marked explicitly, and almost always comes near the beginning of the stretch of text that is characterized by unity of setting. Even in the case of procedures and explanations, the place where the action is to be carried out or the region where the principle holds good may give a partitioning of the text.

Temporal setting, as has been mentioned, is different from spatial setting in that it is always changing. The trees and buildings of a spatial setting remain constant throughout the setting for all practical purposes; but each tick of the clock changes the temporal setting. Nevertheless, it makes sense to speak of a single temporal setting for a stretch of text whenever the actions in that stretch of text take place without mention being made of any discontinuities in the temporal line. If we talk, for example, of the major battles of World War I, we refer to a sequence of events in a temporal setting but fail to take any note of the times that passed between battles. If we were taking

a closer look at that time interval, we would probably use
the boundary periods between major battles as segmentation
points for stretches of speech which indicate no discontin-
uity within themselves, but do use linguistic means to talk
about discontinuity with the preceding and following stretches:
not long after the final action of that battle ...

Spatial setting is very much like stage scenery;
it remains stable once the curtain is up until the curtain
is brought down again, except by overt actions of the
participants in rearranging it. When a text is divided
into parts on the basis of spatial settings, each part is
like a different scene of a play. A special kind of spatial
setting is what Naomi Glock and I (1970) have labelled a
trajectory, or a moving sequence of spatial settings through
which a participant travels. A trajectory is like a temporal
setting in that even though no two actions take place at
the same location, the setting is considered a unit unless
a discontinuity in it, a boundary between it and another
setting, is mentioned. All the actions along a trajectory
belong to the same segment of text.

Theme is a partitioning principle for some languages.
This subject will be gone over in detail in Chapter 11; but
in this context it is enough to say that as long as the
speaker is talking about the same thing, he remains within
a single segment of the text at some level of partitioning.
When he changes the subject he passes from one element of
the organization of the text to the next element.

Munduruku paragraphing is tied tightly to thematic
organization. I would interpret Sheffler's analysis (ms)
as thematic: First comes a particle which says, 'I am going

to change the theme of the discourse and talk about something
else'. Then the new theme is introduced as either the
grammatical object or the goal of the clause. From there on
the theme can be referred to without explicit identification,
even though other elements in the text have to be identified.
Nambiquara (see Menno Kroeker's paper, Appendix 1 of this
volume) has a hierarchy of thematic organization including
at least a global theme for the entire discourse and local
themes which cover sections of the discourse and thus define
segments of the discourse.

Christensen's discussion of the place of topic
sentences in English paragraphs (1966) suggests that change
of theme may be the basis of at least some partitioning into
paragraphs in English. Christensen's model is too simple
for English in that he finds the theme stated only at the
beginning of paragraphs; but this can be filled out by
attention to Christensen's own examples of exceptions. The
paragraphs he gives as topicless have a complex buildup to
the topic sentence, which then appears later in the paragraph.
Nevertheless, his recognition of a thematic basis for
partitioning of texts seems essentially correct, and may
not be in conflict with Becker's observation that changes
of participant orientation are involved in paragraphing
(1966), since participant orientation itself (Chapter 18)
may be a complex form of thematization.

Uniformity of the cast of characters (Chapter 20)
may be a basis for text division. Certainly in the Odyssey
the division between the episode of the Lotus Eaters and the
episode of the Cyclops involves not only a change in spatial
setting, and so we sailed away from that island ..., but

also a change in the characters with whom Odysseus and his
crew were interacting. This is in contrast with divisions
based on a new spatial setting that retains the old cast of
characters, as is common in Xenophon's Anabasis, where the
standard formula is (1:2) "From there he marched on for three
days, twenty leagues to Celaenae, an inhabited city of
Phrygia, great and prosperous. While there...' Just the
opposite is the case in Shakespeare's 'A Midsummer Night's
Dream" IV.i, where the setting remains the same but one set
of characters leaves the stage, a completely different one
enters, while a third set remains through most of the scene.

The point to remember about cast of characters is
that a group may vary in membership and still be the same
group for purposes of linguistic reference. In the example
just mentioned, Odysseus lost a couple of crew members who
remained among the Lotus Eaters, but he still sailed away
with his crew. A candidate takes on the incumbent president,
the news report has it; but in reality the candidate and his
backers take on the incumbent president and his backers.
Divisions in the text that are based on the cast do not
reflect incidental changes in the membership of the groups
that participate in the action, but only the identity of
the groups as groups.

This principle of group identity may apply in
different ways in higher and lower levels of segmentation.
In a Cornell football broadcast, for example, the announcer
may pass on the information coming in over the wire that The
Oklahoma team defeated Kansas State by a score of 35 to 10.
In giving the play by play account of the game he is witness-
ing, however, he will not talk about the Cornell team in

quite the same way. Instead, he will segment his text at
the points where Cornell either gains or loses control of
the ball. At that point either the offensive or the
defensive squad takes over, the personalities are different,
the mode of play is different, and during that stretch of
speech the announcer's choice of vocabulary to describe the
action on the field is different, especially if he is a
local announcer reporting on behalf of one of the teams.
Later, however, in talking about the same game he will say
The Cornell team defeated Yale 13 to 7, reporting that
game as one of a set of games instead of as a sequence of
plays, and treating the team as a unit rather than as two
distinct groups.

Becker (1966) has suggested that English paragraphs
are at least sometimes divided on the basis of what in
Chapter 18 I describe as participant orientation. That is,
there are stretches during which a single participant main-
tains a relatively higher level of activity in relation to
the other participants defined in terms of a ranking of
underlying role relationships. Each stretch has a uniform
orientation to the actions in the paragraph. For Nomatsi-
guenga, however, Wise and Lowe (ms) find that paragraphing
corresponds to orientation cycles. Each cycle begins with
the dominant character in a story initiating an action,
followed by a response in which the secondary character
initiates an action. Each time the cycle returns to the
dominant character as initiator, a new paragraph is
recognized. Barnard and Longacre (in Longacre 1968)
recognize a similar principle behind L-paragraphs. In Ayoré
(Briggs ms) and Jibu (Bradley 1971) there are definite
regularities of participant orientation, but for those

languages participant orientation does not seem to contribute
to partitioning of the text into paragraphs.

Christensen (1963a, 1963b, 1965) has made the gram-
matical relationships of coordination and subordination the
basis for his prescriptive treatment of paragraphing.[1]

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[1]Christensen's use of the term generative is a
misnomer from the point of view of linguistics. He is not
characterizing the set of paragraphs or sentences; he is
telling the student how to produce highly valued paragraphs
and sentences. Because his advice to the writer is in
general good, one tends to feel lenient about his misuse of
a jargon term which, after all, has tripped more than one
professional linguist.

He looks at the clauses in a sentence and the sentences in
a paragraph as a kind of tree or outline structure in which
subordinate points depend on superordinate points, and in
which at any level of subordination there may be two or more
points that are subordinate to the same point at a higher
level and coordinate with each other. Paragraph breaks in
his view are appropriate whenever one returns from a lower
or less inclusive level to a higher or more inclusive level.
Dik (1968) adds materially to the discussion of coordination
and subordination, though he does not go into its relation-
ship to paragraphing.

I have made a similar point (Grimes ms) in regard
to the general model of relationships among linguistic
elements: for many languages a tree structure or its more
familiar counterpart, the outline, is a very good representa-
tion of the organization of information both within sentences

and in groupings of sentences and further groupings of those
groupings. Meyer (1971), finds that a tree or outline representa-
tion seems to have a psycholinguistic validity in that
recall of high level or more inclusive nodes is superior to
recall of low level nodes except when the low level nodes
give details (numbers like 1776 or proper names) that have
been learned with effort in other contexts. Fuller (1959)
bases his system of textual exegesis on the assumption of a
tree-structure that involves coordination and subordination.[2]

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[2]Fuller's success in expressing text relationships
in tree form was one of the stimuli that turned my attention
to the more general problem of discourse structure.

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2. LEVELS OF ORGANIZATION

Longacre (1968) makes use of the notion of standard
levels of organization within text that are consistently
present in languages of the world: morpheme, stem, word,
phrase, clause, sentence, paragraph, discourse. There are
variations on the main pattern; for example in many languages
of New Guinea there is no useful distinction between the
sentence and the paragraph, in some of the Mayan languages
of Middle America it is difficult and probably structurally
unnecessary to tell a word from a phrase, and in some langua-
ges of Vietnam (Watson 1966) clauses and sentences are not
sharply differentiated. Nevertheless, in most languages,
and elsewhere in the   hierarchies of even the languages in
which there is some lack of distinctiveness, it is at least
heuristically useful and typologically valid to expect
considerable consistency from one language to another in
terms of levels of organization.

My own position at the moment, as expressed in connec-
tion with outline structures (ms), is that there seem to be
three general kinds of semantic units: roles or cases,
which in a predicate grammar (Chapter 13) are a class of
predicates that are characteristically dominated by and selec-
ted by the lexical predicates (for example, go selects an
Agent, the one who goes, in its use as a verb of motion),
lexical predicates that correspond more or less to the mean-
ings of words, and rhetorical predicates that express the
relationships that unite propositions built from lexical
predicates and roles into rhetorical complexes, and that
recursively unite rhetorical complexes. The minimal
expression of roles and lexical predicates is in the clause,
while the minimal expression of rhetorical predicates is in
more than the clause, usually the sentence. Larger units
are required for expressing more complex productions made
within the rudimentary grammar that is implied here.
Sentences, paragraphs, and the like are most conveniently
thought of as packages of information that are wrapped up
and labeled in a standardized form for the hearer's benefit,
to help him keep track of where he is. The implications of
this view are discussed in more detail in Chapters 24 and 25.

Whether Longacre's levels of organization have a
universal basis or not, they do form a useful grid for the
analysis of discourse. I will comment on them in order from
least inclusive to most inclusive.

Longacre speaks of the clause as the unit whose
function is to 'express predications'. This is not to say
that no predications are expressed except in clauses, but
rather that the clause is the minimal unit of this kind and
the one that is most commonly used to express the kinds of

relationships that I treat as lexical. It should also
be borne in mind that some semantic configurations that
could be expressed as clauses are expressed in embedded form
as nouns or adverbs or relative clauses; from the semantic
point of view, however, they are predications none the less.

Sentences are 'propositions which may concatenate,
oppose, balance, or report predications, in Longacre's
hierarchy. A one-clause sentence is thus more than the
simple predication of its clause component; it is the
reporting or the assertion of that predication. Longacre's
article on the sentence as a statement calculus (1970) and
its later development by Ballard, Conrad, and Longacre (1971)
exemplify Longacre's position, which in general agrees with
my own observation that certain rhetorical relations (con-
ditions, for example) cannot be expressed within the compass
of a clause in surface structure, but instead require at
least a sentence to say.

Although Longacre and I both have little to say
about levels of organization between the sentence and the
paragraph, I have recognized in Huichol (1966) a period
consisting of a string of related sentences that seemed to
play a part in the hierarchical system.

Paragraphs in Longacre's model are 'units in develop-
ing discourse'. Of the principles discussed in Section 1 of
this chapter for partitioning texts, I find that the unity
of time or place, unity of participant orientation, and unity
of subtree or suboutline structure frequently correspond to
a recognizable surface configuration larger than the sentence
that can conveniently be called a paragraph. Whether these
units are the building blocks out of which discourse is put

together directly, however, seems to me to depend on the
complexity of the whole. The relationship of a paragraph
to a novel is probably different from the relationship of a
paragraph to an instruction sheet for a dishwasher, not only
because of the difference in subject matter and style, but
also because the novel is vastly more complex and requires
many intermediate layers to be recognized, whereas the
instruction sheet may divide immediately into paragraphs.
In Longacre's model these intermediate layers are assumed
to be embedded discourses (1968).

Certain groupings of paragraphs have been recog-
nized in texts. In Ilianen Manobo, for example, Wriggles-
worth (ms) finds an incident level and an episode level whose
surface forms are not simply strings of paragraphs, but which
have their own characteristics. These characteristics are
expressed as constraints on the way settings may be referred
to anaphorically, as formulas, and as other things:
'Episode settings always involve a change of participant
orientation and scene from the previous incident in the
story ... While the opening incident of an episode takes
its temporal setting from the speech of the participant thema-
tized in the episode setting, settings for subsequent incidents
are defined by their motion away from or their return to the
previous setting ... Incidents nearly always conclude with
evaluative paragraphs'. Kayapó (Stout and Thomson 1971) has
episodes in narrative. They consist of a transition para-
graph which links the episode to the preceding one by
repeating its base paragraph, followed by one or more base
paragraphs that give the action, and optionally end in an
explanatory paragraph that gives non-event information.

The planes of an overlay (19.3) are another kind of
complexity that can be intermediate between the paragraph

and the discourse. A line of argument, usually an enthymeme,
may make up more than one paragraph of a nonsequential dis-
course, especially if some points of the argument are illus-
trated, say by a narrative. As mentioned earlier (Section 1)
with regard to unity of cast, an episode may consist of a
series of paragraphs in which the same characters take part,
so that a new episode begins when a significant change of
participants takes place. The term chapter is available in
linguistic terminology for still larger intermediate levels
of organization; there is probably no means of establishing
a limit on how many intermediate levels of organization there
can be between the paragraph and the discourse.

Discourse itself has to be taken as the ultimate
level of organization, that level beyond which members of
the culture no longer recognize the kind of closure that
Pike speaks of in defining the behavioreme. Even though
this notion of cultural recognizability is useful enough for
me to take it as a primitive, undefined and undefinable notion,
it leaves open some questions that I cannot answer: is an
unstructured conversation, as at a cocktail party, one
discourse or many? (Weizenbaum 1967) Is there not a form of
verbal rambling that has a paragraph structure but not a
discourse structure? Do marginal forms of speech such as
glossolalia (Samarin 1971) have a discourse structure, or
only a phonological structure? Can we speak of different
discourse structures when, for example, a radio announcer is
speaking into a microphone to his audience, stops for a
commercial, talks to the engineer, goes back to talking to
his audience, and perhaps even asks the engineer for coffee
by turning off the microphone between sentences and calling
to the engineer? Fortunately we do not have to suspend all
study of discourse until questions like these are resolved,
because there are enough discourses that are well behaved to
give us plenty of insight into language just in describing
them.

CHAPTER EIGHT

SEMANTIC ROLE STRUCTURE

Up to now most of what I have had to say has been
heuristically rather than theoretically inclined. The
different kinds of information that are found in discourse,
as well as the different sizes and shapes of structures
that discourses can be segmented into, now need to be
discussed in contexts in which it can be seen more clearly
why they contribute what they do to discourse. The reason
for bringing them up together in the preceding chapters
was partly to give the reader an idea of the kinds of things
that can be included in discourse studies, and partly to
suggest ways he himself might approach the linguistic
analysis of texts.

1. CONTENT, COHESION, AND STAGING

Turning now to models of discourse phenomena that
can give insight into the relationships that underlie
discourse, there appear to be three distinct sets of
relationships on which we need to focus (Halliday 1967b).
The first I will call content organization. It has also
been referred to as cognitive or referential structure, and
more loosely has been called semantic organization or
meaningful structure. It embraces lexical and rhetorical
relationships; that is, both the way in which things that
are perceived are said to relate to each other in the
ordinary sense of dictionary meanings (Chapters 8 to 11),
and the way in which these propositions about relations
group together into larger complexes (Chapter 14). The

content system of language thus has a hierarchical side to
it that to a certain extent is reflected by the kind of
surface hierarchical groupings discussed in Chapter 7. It
probably includes what Fillmore and Halliday call modality,
though this may be a separate system. It also has a side
that cannot be matched to the hierarchical side without
bringing into linguistic theory something that many linguists
would rather keep out: reference.

A second set of relationships is fundamentally
independent of the cognitive set. These are <u>cohesion</u>
relationships, which relate what is being said at the moment
to what has already been said (Chapter 19). Cohesion is
cumulative and linear rather than hierarchical. It has to
do with the means of introducing new information and of
keeping track of old information, rather than with what the
content of the new or old information actually is. It is
also tied up with the speaker's estimate of the rate at
which the hearer can process new information.

The third kind of relationships that operate in
discourse are <u>staging</u> relationships. They are concerned
with expressing the speaker's perspective on what is being
said. Normally they make one part of a stretch of discourse
the <u>theme</u> or <u>topic</u> and relate everything else to it. There
are thematic structures that set the stage for entire dis-
courses, thematic structures that stage only clauses, and
thematic structures at intermediate levels (Chapter 21).

In the simplest instance staging, cohesion, and
content support each other: the theme for staging is
selected from information that has already been introduced,
and this is related to the rest cognitively as well as
thematically. Frequently enough, however, at least one of

the three ways of organizing information parts company with
the rest; this is why they have to be distinguished.

     Possibly there is a fourth kind of organization in
discourse, a modal component that relates the discourse to
the speaker (Chapter 15). If, however, the notion of
performatives is capable of being fitted within the content
hierarchy, then modal information might be taken as one
kind of content that is introduced via the performative.
As far as this book is concerned I treat modal information
as part of the content system.

     Now let us consider that part of the content
structure that I have just labeled lexical and proceed to
give it a more definite shape. The concepts discussed in
this chapter and the next few are a necessary background for
developing a theory of discourse, even though they do not
contribute directly to discourse itself. Accordingly, we
will come back to discourse as such in Chapter 14 on rhe-
torical content structure, and again from Chapter 16 on.
Meanwhile let us build up the framework for talking about
discourse.

     First, it is desirable to make a distinction
between those things in language over which the speaker can
exercise choice and those over which no choice is available
to him. The first reflect meaning; as many linguists have
pointed out, meaning is possible only when the speaker
could choose to say something else instead. The second are
the more mechanical components of language, the implementa-
tion process by which the results of the speaker's choices
are expressed in a conventional form that permits communi-
cation with someone else. For example, a speaker of English
can choose whether to talk about cats or about dogs; and in

connection with that choice he can decide whether to talk
about one of them or about many. If he decides to talk
about cats, and many of them, however, he is then restricted
as to where he can put the sound that lets the hearer know
that he has selected the 'many' option--the plural marker.
It must come after the noun cat, not before it, and its
phonetic form is constrained by the word it goes with--
-s after cat and similar words, -z after dog and similar
words, and so on by well known rules. The speaker has no
choice over the position or the voicing; they are part of
the implementation.

This distinction between choice and implementation
is similar to the distinction between content and expression
made by Hjelmslev (1953) and later adopted by Chafe (1970);
it also corresponds to Saumjan's two levels of linguistic
structure (1965). One way of defining the difference
between deep and surface structures is also compatible with
this: that of linguists like Langendoen (1969) and Lakoff
(1965) whose representations of semantic structures are
capable of being well defined, correspond systematically
to surface structures, and are central to their point of
view.[1] As Max Black (1968) has pointed out, this division

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[1]The older deep-surface distinction of Hockett
(1958) and Chomsky (1965) was an attempt to move linguistics
in the right direction; but it went only part of the way.
Chomsky's later theory (in Steinberg and Jakobovits 1971)
in principle accounts for the same semantic structures and
relates them to surface structures in the same way as a
theory like Langendoen's; but it does so in what to me is
a much less insightful and revealing way by making semantics
an interpretation of the syntactic structures that are
associated with the language generated by his grammar.

of language into elements involving meaningful choice and
the means of expressing the results of that choice is one
question; whether those choices can in fact ever be made
without reference to the possibilities of implementation
that exist for each choice is a separate question.

I adopt the position here that the choices a speaker
has available within the content system can be expressed
by means of propositional structures (Chapter 13). Each
proposition contains a predicate, which expresses a semantic
relation among arguments, which may themselves be proposi-
tions.[2] Propositions, predicates, and arguments will occupy

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[2]The term predicate is used here in its logical
sense: 'designations for the properties and relations
predicated of ... individuals' (Carnap 1958.4). This
should not be confused with the use of the term for the
linguistic surface element called predicate that involves a
verb and its adjuncts (Pike 1967.250) in their relation to
a subject. Complexes of propositions, in which some
propositions are arguments of others, have the form of a
tree generated by a recursive context free grammar whose
properties are discussed in Chapter 13. Although I have a
suspicion that there may be better ways than this to
represent semantic relationships, I do not have any of them
worked out yet; and tree structures are adequate for enough
of what needs to be said about the organization of content
in the context of this book on discourse that I do not find
them a bad or misleading representation.

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us throughout most of this chapter and the next five. The
implementation that relates propositional structures to
the corresponding surface forms is expressed as a set of
transformations.

Much of the content of discourse is expressable in
terms of predicates whose arguments are related to them in
a small number of conventional ways called role or case rela-
tionships. The predicates whose arguments involve role
specifications directly are the ones I call lexical; the
one that underlies English eat is an example. Those whose
arguments are related in other ways I call rhetorical; the
one that underlies English because is an example. There
may be predicates that have some arguments that are limited
by role specifications and some arguments that do not; if
so, they constitute an intermediate class. The rest of
this chapter is concerned with role relationships and the
part they play in lexical structure.

2. ROLE RELATIONSHIPS

The idea that a certain few relationships operate
in the semantics of a great many words is not new. C. C.
Fries devoted two chapters of The structure of English
(1952.173-239) to structural meanings. In his discussion
of subjects and objects he lists five meanings which the
subject of a sentence can convey: (1) performer, (2) that
which is identified, (3) that which is described, (4) that
which undergoes the action, and (5) that to or for which
the action is performed. These meanings correspond respec-
tively to the role categories of Agent, Essive, Patient of
a state, Patient of a process, and Benefactive. The role
names are, however, more than just a shorthand for the
kinds of subjects that Fries labeled. They correspond to
similar relationships manifested in areas of surface grammar
that have nothing to do with subjects and objects.

Pike (1954.131,150) recognizes, following Fries,
that the notion of grammatical subject is a mixed bag. In

his second edition (1967.196) he speaks of a 'class of various
different subject tagmemes'.

Pike also speaks (1967.246 note 14) of an analysis
of discourse in which the dramatis personae are traced
through a plot, and of the independence of the dramatis
personae from grammatical slots such as subject and object.
He finds that 'from the viewpoint of the tale as a whole
... the dramatis personae remain invariant'. The idea is
developed further in an article on matrices composed of
tagmemes (Pike 1964). Longacre uses the notion of dramatis
personae metaphorically along with props, scenery, local
color, and plot to characterize predication clauses (1964.
35). The list of tagmas that are potentially suspect because
of similarities in slot meaning (1964.63) is related to the
surface manifestations of role relationships, but is not
concerned with the relationships themselves. Barnard and
Longacre (in Longacre 1968.194-223) identify participant
roles in relation to the discourse as a whole, similar to
Pike's invariant dramatis personae.

The notion of role relationships as part of the
meaning of words has been most successfully exploited in
tagmemics by Richard Kerr (1965) and by Forster and Barnard
(1968). In distinguishing role relationships from surface
tagmemes, then stating explicitly the mappings that relate
roles to tagmemes, Barnard and Forster paved the way for an
important advance in the understanding of semantic relation-
ships in verb systems of languages of the Philippines
(Hettick ms; see also Ashley ms, Draper ms, L. Hohulin ms,
J. Miller ms, Rhea ms, and West ms).

As far as American linguistics is concerned, the
landmark in the study of role relationships is Charles

Fillmore's paper 'The case for case' (1968). Fillmore not
only summed up a lot of what had been written on the subject,
but pointed the way toward an extension of role or case
grammar to cover more than just verb-noun relationships.
Possibly more important still, he did it in a way that
caught the attention of linguists of a number of theoretical
persuasions. Other writings of Fillmore's help round out
the picture. Still other insights are given by Langendoen's
applications of case grammar (1969, 1970), and by its
adoption as the frame of reference for the UCLA synopsis of
work done up to that time on English transformational grammar
(1968). Frantz's grammar of Blackfoot (1970) illustrates
another possible formalization of role grammar, outstanding
in that he makes explicit the required transformational
apparatus that others tend to leave implicit.

       Ideas similar to Fillmore's have appeared in other
works. Lyons, for example (1966, 1968) proposes a notional
theory of parts of speech which, taken together with his
view of grammatical functions, results in a picture of
grammar that does not differ greatly from Fillmore's.
Halliday (1967a) discusses the same kind of relationships
under the label of 'transitivity'. Chafe (1970a, 1970b)
centers his attention on the verb rather than on verb-noun
relations as such, but the effect he achieves is substan-
tially the same. Weinreich's semantics, also verb-centered
(1966a, 1966b), fits the same paradigm. His transfer
features are capable of being extended into a Fillmore
grammar, as Hall's work on Subanon demonstrates (1969).

       Organizing a good deal of the information about a
language in terms of role types gives insight into an
intriguingly broad range of phenomena. I take the position

that role or case grammar is one of the important contri-
butions of current grammatical theory. Even though it
does not account for everything in language, yet it sheds
light on enough that it should now be one of the standard
areas of study in any language. Furthermore, role rela-
tionships shed light on discourse phenomena, as we shall
see in Chapter 18.

So far each linguist who has written on roles has
come up with a different list of what the standard role
relationships are. The canonical list I give here differs
slightly from every other that I know of. What is signifi-
cant, however, is not that linguists disagree on what roles
there are; that is, on the exact specification of the small
set of conventional relationships, quite likely a property
of all languages, in terms of which a large portion of
semantic structure is organized. The significant thing is
that as studies of the properties of role systems continue,
there seems to be a convergence in the findings of different
scholars. Given the application of the idea to more and
more languages, and in greater and greater depth in some
languages, there seems to be an empirical shaking down of
the idea of roles or cases to within the limits that normally
apply to two scholars ever agreeing on anything.

Another aspect of role systems that contributes to
an effect of imprecision is the likelihood that some behave
differently from others. As we shall see, there is reason
to believe that at the deeper levels of semantics, Instru-
ment and Benefactive are themselves lexical predicates
superordinate at an early stage in a semantic derivation to
the lexical base element with which they are associated.
Later they are transformed in such a way that from there on

they behave like the other roles. Furthermore, some role relationships may themselves be semantically more similar than others. Frantz (1970.161), for example, recognizes that for certain purposes Source, Noninstigative Cause, and Instrument act indistinguishably; at that point he treats them as a more comprehensive role labelled Means. In the same way, the Experiencer and Goal roles were lumped together as Dative in Fillmore's 1968 paper, but later split; yet there are times when it is convenient to have an undiffer-entiated Dative role that includes both.

.3. A LIST OF SEMANTIC ROLES

        In giving my own list of roles I adopt Fillmore's convention of capitalizing the first letter of a role name. I also introduce one-letter abbreviations of the role names, not so much to clutter up the text with them as to give the reader a notation for working on data. My purpose is not to define role relationships exhaustively, but only to introduce them in a way that I can make use of in later chapters, since the part role relationships play beyond the sentence is not extensive.

        AGENT (A) relates the instigator of an action to the action. The Agent of an action is the one who performs it. Typically this implies animateness. The implication is strong enough that animateness is carried over into figures of speech. Along with the boy (A) hit the ball, where everyone agrees that the boy did something, we have personifications like Fortune (A) smiled on her and reifi-cations like linguistic theory (A) prohibits the use of Feature X with Feature Y (which, as any insider knows, invariably means 'As I look at things this morning, I fail to see why X and Y should go together').

Where causatives are involved there is some question
about whether a separate role, Causative Agent, should be
added to the list. For a number of Philippine languages a
distinction has been made, for example, between Causer and
Actor, to cover examples like Sally (Causer) had John (Actor)
set the table, where John set the table but Sally instigated
it. If we take Frantz's principle (1970) of proposition
consolidation into account, however, this distinction
becomes superfluous. Causatives are analyzed semantically
into a predicate on the order of cause with two arguments:
an Agent of its own, corresponding to Sally in the example,
and a Patient which is itself a lexical proposition, corres-
ponding to John set the table in the example.' This embedded
proposition has its own Agent, John. Under certain condi-
tions (discussed in 24.2) a transformation known as
proposition consolidation applies, giving a pseudo-proposi-
tion in which Sally is now the Agent as far as later trans-
formations are concerned; for example, Sally is the subject
of the output sentence. Moreover, in the subsequent applica-
tion of transformations, John is no longer treated as Agent
in his own right, but more as a Goal element would be
treated. Proposition consolidation (11.2) results in the
causative pseudo-proposition having some characteristics
that also underly sentences like Sally (Agent) handed John
(Goal) the biscuits (Patient) as well as characteristics of
John set the table.

An equally strong reason for not making the agent
of a causative into a separate role is that it leads to
arbitrariness. In Mother had Sally have John set the table,
Mother instigates the action and John is the actual Agent
who performs; but a third role would have to be set up for
Sally in this case. Since there is no principle that allows
us to limit the depth of embedding of causatives, neither

is there a limit on the number of Causer roles that would
have to be recognized as distinct; yet the semantic rela-
tionship of each role to its causative element would be
identical.[3]   It is therefore preferable to recognize that the

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[3]English has a variety of lexical predicates with
causative semantics: cause, have, make, and the like.   In
languages like Huichol where explicit causative verb stems
are less frequent than morphological markers of the causa-
tive relation, it is correspondingly less tempting to side-
step the question of multiple layers of causative embedding
by focusing on the things that distinguish, say, cause from
make and make from have, when the point at issue is the
extent to which they behave identically rather than the
obvious fact that they do not mean quite the same thing.

---

apparent two-sidedness of the role structure of Sally in
the example (the 'double function' Pike attributes to such
elements in 1967.574) is the result of proposition consolida-
tion. The semantic function of Agents embedded within
agentives is blurred as a consequence of getting them
arranged into linear form for transmission by speech.

     PATIENT (P) tells who or what is affected by an
action. The patient may be changed or moved, depending
upon the meaning of the predicate. This close tie between
the Patient role and the meaning of the predicate results
in a nondistinctive character for the Patient role itself;
it could almost be thought of as that role to which an
element is assigned when there is no good reason for
assigning it to some other role. The absence of a distin-
guishing trait of its own, it must be remembered, is neither
a deficiency of the role nor a weak point in the scheme
of role analysis; it is an instance of the well recognized

property of linguistic systems that one member of nearly
any set of elements represents the choice that is made in
the absence of a good reason for choosing any other member.
The unmarked member of a set is thus a default element that
does not need to be defined positively; it is the neutral
term against which the other marked terms are set off.
(Lyons 1968.79 and Chomsky and Halle 1968.402-435 discuss
the whole topic of markedness, which will be raised again
in Chapters 19 and 21.) In fact, some linguists have
preferred to name the Patient role Neutral as a reminder
of its unmarked character.[4]

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[4]Still others use the term Objective to refer to
the Patient. In working out relations between role systems
and surface grammar categories like subject and object I
find enough slippage introduced by the term Objective that
I have stuck with Patient, though I realize that it has
medical overtones that can give rise to as many bad puns as
'foot' does in phonology. The term Affected has also been
used. In the literature of role systems, however, there
seems to be adequate agreement that the Patient/Objective/
Neutral/Affected role needs to be distinguished from all
other roles, call it what you will.

Even though the meaning of the Patient depends upon
the predicate with which it is associated, there are charac-
teristic areas of meaning that render the role easy to
identify. The thing that undergoes some process is the
Patient, whether it undergoes a shift in position as in the
snowflake (P) fell, the foundation (P) settled, and the
shaft (P) turned, or whether it undergoes a change in state
as in the snowflake (P) melted, the foundation (P) cracked,

and <u>the shaft (P)</u> <u>vibrated</u>. Processes end, leaving the
things that undergo them in some state or other, so that
there is a logical affinity between some processes and some
states. Semantically anything that is in a particular state
is also a Patient. In English, though by no means in all
languages, states have to be expressed in a special gramma-
tical form involving <u>be</u>: the <u>snowflake (P)</u> <u>is white</u>, <u>the</u>
<u>foundation (P)</u> <u>is cracked</u> (here there is a morphological
affinity between the expression of the process, <u>crack</u>, and
the expression of the resulting state, <u>cracked</u>), <u>the shaft</u>
<u>(P) is half an inch in diameter</u>, and even <u>what you are</u>
<u>asking for (P) is impossible</u>.

    Animateness is incidental to the Patient role. It
is built into the Agent role; but it is either irrelevant
or tied to the predicate in the Patient role. For example,
along with <u>the snowflake (P) fell</u> we can have <u>the skier (P)</u>
<u>fell</u>, both of which fit the Patient diagnostic <u>something</u>
<u>happened to X</u>.[5] For <u>the child (P) got sick</u>, however,

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[5]The second example also fits the Agent diagnostic
<u>X did something</u>, but with a different meaning. As Patient
of <u>fall</u> (and here the medical metaphor obtrudes) we assert
that an accident took place. As Agent we assert that the
skier took evasive action of some sort. The sentence <u>the</u>
<u>skier fell</u> is thus ambiguous by itself, in a way that corres-
ponds exactly to which role structure it is taken to have,
so that no further discriminator than the roles is needed
for the two areas of meaning.

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animateness of the patient is required by the meaning of the
predicate. <u>The snowflake got sick</u> makes sense only in a
fairy tale in which snowflakes are acting animately.

EXPERIENCER (X) is the role appropriate for perception and psychological involvement. In English think and hear both have usages that are clearly nonagentive in contrast with agentive counterparts: I(X) think it's going to rain, don't you (X) hear the band playing? The agentive counterparts also include the experiential component: Let me (AX) think it over, when will you (AX) listen to my report? The Experiencer is inherently animate just like the Agent. Its compatibility with agentively oriented modes like the imperative is tenuous enough that one wonders about commands like know algebra as over against the obvious agentive learn algebra.[6]

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[6]The assertion that is sometimes made that imperatives and Experiencers do not mix seems to need qualifying rather frequently. Know this poem by Thursday and know thyself are quite normal, though one recognizes that their meaning is agentive. Learn thyself is out because the Patient is personal. Know that tomorrow is Friday and learn that tomorrow is Friday both fall flat, though I know that tomorrow is Friday is fine as an experiential and I learned that the next day was Friday gives no problems even though it may be either agentive or nonagentive. Nevertheless, although poorly understood verbs like these are open to argument on specific instances, it seems clear that they involve a role that is neither Agent nor Patient.

INSTRUMENT (I) represents something that is used inanimately to perform an action, as in he cleared the yard with a rake. It stands in a causal relation to the action. Just as the Agent and Experiencer roles attribute animateness to anything in those relationships, Instrument attributes
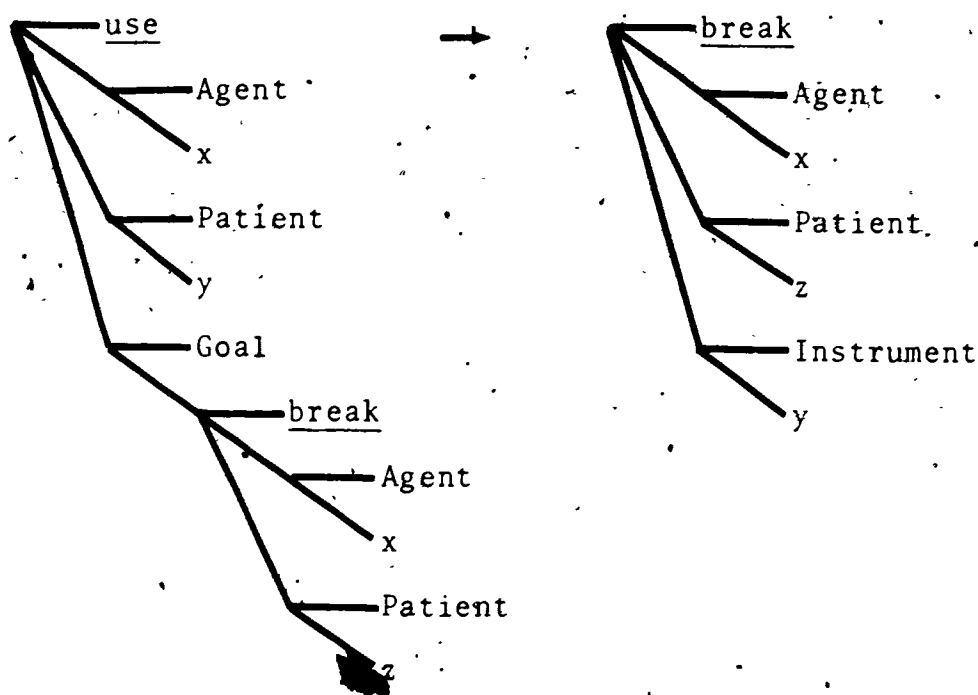
FIGURE 8.1. Derivation of the structure underlying
'X broke z with y'.

inanimateness, so that if a person, for example, is used as
Instrument, that person's body as a passive object is meant
rather than his active collaboration: Superman broke the
window with the gangster means that he heaved the gangster's
body through the window. In some languages the Instrument
role implies that the Instrument is in motion (Hettick ms);
English, however, permits Instruments that involve no motion
like he convinced the jury with a syllogism.

      As was mentioned earlier, Instrument may not be a
role at the deeper levels of semantics, but a two-place
predicate in its own right, one that eventually becomes
consolidated with the predicate that it dominates in such a
way as to give the effect of being a role later in the process
of postsemantic shaping. Figure 8.1 illustrates this concept.
Note that other roles like Agent and Patient are presented
in the figure as one-place predicates that are dominated
by the predicate that carries the main lexical meaning,
which we will call the base predicate of the complex. Instru-
ment, on the other hand, has the following characteristics:
(1) it dominates the base predicate, which stands to it in a
Goal relationship, (2) it has its own Patient, which is the
element that acts as Instrument after consolidation, and (3)
it has its own Agent, which must be coreferential (Chapter
12) with the Agent of the base predicate.

      There are cases where consolidation does not take
place, so that an element that is potentially an Instrument
is treated instead as superordinate to the base predicate
throughout its mapping into surface structure. Constructions
like these are what force us to think in terms of structures
like the left hand side of Figure 8.1 in the first place.
They leave us, however, with the job of accounting for why

use
prominent
Agent
x
Patient
y
Goal
break
Agent
x
Patient
z
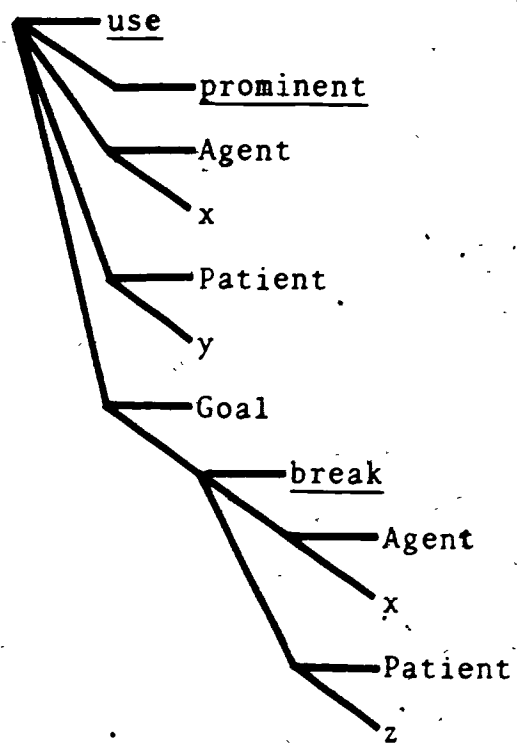
FIGURE 8.2.   Derivation of the structure underlying
'X used y to break z', with consolidation blocked.

the transformation used in 5.1 does not apply in some cases,
so that instead of getting consolidation to x broke z with y
we get the unconsolidated form x used y to break z.

Although at one time it was considered adequate to
label the transformation of proposition consolidation as
optional; there seems to be more to consolidation than that.
In our current concept, transformations are part of the
machinery of expression and hence cannot by definition
contribute anything to meaning.' Yet there is a difference
in meaning between x broke z with y and x used y to break z:
a difference either in the prominence the speaker places on
y or in the deliberateness with which x uses y.' I have
diagrammed the former possibility in Figure 8.2 by adding a
predicate prominent to use. If this is a valid way to charac-
terize what is different about the meanings of the two
sentences,[7] then the presence of the element prominent can

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[7]Prominent might attach instead to the predicate
Patient that is associated with y. In either case, its
effect is to inhibit consolidation. Note that it is a
predicate of no arguments (13.1). I suspect that at the
deepest level it comes from the staging (thematic) system
and is transferred to appear as part of the content.

---

be taken to block the consolidation transformation.

Looked at in another way, an element like prominent
as used here appears to be equivalent to choosing a marked
member of a set of similar predicates, say, use actively as
opposed to a colorless use. The unmarked use allows consoli-
dation and gives an Instrumental role, while the marked use
actively blocks consolidation and yields the surface verb

use. If this is the case, consolidation of the Instrument
is parallel to consolidation of the causative. He caused
her to die involves a marked causative (or possibly a combin-
ation of prominent with the causative), while he killed her
may be consolidated from unmarked cause and die. (The other
possibility is that kill is simply the agentive form of die.)

GOAL (G) tells where an action is headed or where it
ends up, depending on the action. In the pusher sold the
junkie some heroin, the heroin is Patient; it gets trans-
ferred. The junkie is Goal; the Patient ends up with him.
In the junkie bought some heroin from the pusher the junkie
is still Goal, but he is simultaneously Agent, with different
grammatical consequences. In we went to Wyoming the action
does not involve motion of a Patient, but does involve
motion of the Agent, with Wyoming as the Goal.[8]

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[8]The term Goal is used in a simpleminded fashion as
a role label. It should not be confused with the use of
the term by Bloomfield (1933) and others to mean 'grammatical
object', often in the explicit sense of object as Patient.
I take it that this usage reflected their dissatisfaction
with traditional labels of surface grammar at a time before
much progress had been made in separating out surface cate-
gories from the underlying semantic relationships they
express.

In English Goal does not seem to be the counterpart
of what have been traditionally called purpose clauses.
The purpose relationship has to be classified as rhetorical
(Chapter 6) because it can coexist with Goal, as in
    Ride a cock horse to Banbury Cross,
    To see a fine lady upon a white horse.

Banbury Cross is the Goal, and to see ... stands in a still
different relationship to ride. Omie (John Austing ms)
has   a role relationship called Telic that is distinct
from Goal but that can still be expressed within the compass
of a single clause, which is not the case with the English
purpose clause. (English sentences like he called to his
wife for coffee may make it necessary to consider a distinct
Telic role as well.

As with Patient, the animateness or inanimateness of
a Goal element is beside the point. Nevertheless, the
surface expression of a Goal may differ depending on whether
it is animate or not: with verbs of motion, compare French
à in allons à l'opéra 'let's go to the opera' with chez in
allons chez George 'let's go to George's'.

Early experiences in analyzing role relationships
suggest that there may be times when it sounds forced to
have to distinguish Goal from Experiencer. In they showed
us the slides of their trip, for example, to categorize us
as either Goal or Experiencer seems slightly arbitrary.
This may be only because the semantic relationships are not
yet thoroughly plotted out; but it could also be because
they are not fully differentiated in this context. Fillmore's
original Dative may have a place here to label the undiffer-
entiated semantic relationship, while the more differentiated
forms are used elsewhere.

SOURCE (S) is the reverse of Goal; it tells where
something that moves starts its motion from. To go back to
the earlier examples, in the pusher sold the junkie some
heroin the pusher is not only Agent but also the Source
from which the Patient moves away. In the junkie bought

some heroin from the pusher the pusher is Source but not
Agent.   In we left Georgia it is the Agent, not the Patient,
that moves, and the Source region at which the motion begins
is Georgia.   As with the Goal, animateness of the Source is
incidental.

Mamanwa of the Philippines (J. Miller ms) has two
kinds of predicates that combine Agent and Source.   In one,
the Patient starts out where the Agent is, but separates
from the Agent in·the course of the action, as in ambaligzà
hao ka makaen kan Mariya 'I (AS) will sell the food (P) to
Mary (G)'.   The other kind not only has the Patient begin
the action where the Agent is; the action by its nature
involves the Agent moving with the patient, as in iolì nao
ining baskit doro kan Robirto 'I (AS) will return this
basket (P) there to Robert (G)'.   The range of possible
clause forms that express these predicates of accompaniment
is distinct from the forms for Agent-Source predicates that
assert separation.

NONINSTIGATIVE CAUSE (C) is Frantz's term for a
role relationship that is similar to Source and Instrument
but must be kept distinct from both.   It asserts a causal
relation but denies both animateness and intent, and so is
not coupled with Agent as is Instrument.   In both the girl
died of malaria and malaria killed the girl, malaria is the
Noninstigative cause; there is no Agent who is using malaria
with deadly intent, nor is malaria itself being personified.
The thematic possibilities of Noninstigative cause are
different from those of Agent; for example, the agentive
Fu Manchu killed the girl does not have a matching *the girl
died of Fu Manchu.   (That sentence, however, is starred as
impossible only in the agentive sense; it is acceptable in
the sense of I'm sick of Dick, where Dick is Nonagentive
cause but not Agent.)

Again, the river carried away my hat is ambiguous;
personified, the river could be Agent, cr as inanimate,
Noninstigative cause. My hat got carried away on the river
is not agentive, because the preposition is wrong for such
a reading but possible for Noninstigative cause.

-- I had once hoped to be able to lump Noninstigative
cause together with Source into a single role; but English
forms like the wind brought her the small of flowers from
the garden compared with the smell of flowers came to her
from the garden on the wind makes it necessary to keep them
separate. There may be instances, however, where a less
differentiated Source-Cause role is all that is required.
Frantz notes a lack of differentiation between Noninstigative
cause and Instrument in certain instances in Blackfoot, which
he labels Means.

RANGE (R) is the term I have chosen, following
Halliday (1967a), for the relationship that others have
labeled Locative, Locus, or Place, since those terms are
easily confused with the notion of setting (Chapter 4).
Range refers to the area or field in which an action is
carried out. The most characteristic mark that distinguishes
Range from Patient is that while the Patient typically is
changed in form or position, Range is not affected in any
parallel way. Range is, however, essential to the meaning
of the predicate to which it is an adjunct; it cannot be
separated off as can a clause that establishes a setting.

For example, Halliday (1967a) points out that the
street in they crossed the street stands in a different rela-
tion to the action than it does in they paved the street,
where something happens to the street. This is shown also
by the readiness with which pave accepts the passive: the

street was paved by them.   Cross is awkward in the passive,
unless it is taken in another sense that requires a Patient,
namely 'paint a cross on something', in which case the
street was crossed by them is acceptable.

Even though it is difficult at times to know whether
one is dealing with Range or Patient, there is enough
evidence that they must be kept separate in some situations
to require Range to be recognized as a separate case. In a
number of languages of the Philippines the distinction is
essential for one class of verbs in which Range and Patient
are mutually identifying. Ashley (ms) finds a category of
verbs in Tausug called field of action verbs in which the
Range, designates either the field where the action takes
place or the field of which the Patient is a member or
component. The Patient is not mentioned explicitly, but
is some element that is chosen from the field identified by
the Range. The resultant meaning is partitive: drink I
water (R) 'I will drink some of the water'. The Patient
counterpart is also possible, but has a different meaning
in which the Patient is treated as a whole, not as part of
a Range: drink I water (P) 'I will drink the water up'
implies total rather than partial action.[9]

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[9]Unlike English, there is an overt difference in
the surface forms of the two Tausug sentences given as
examples. Range in a field of action verb maps to a surface
grammatical category known as referent that is signalled
under certain conditions by a special referent focus
inflection in the verb coupled with a phrase proclitic in
the corresponding noun phrase. Patient, on the other hand,
maps to the grammatical object category, signalled by a
verbal inflection of object focus that distinguishes it from
referent.

Range is the only role associated with a class of predicates that take the form of meteorological verbs in a number of languages. English, for example, has Ithaca (R) is cold. This form is not parallel to ice (P) is cold, since the former has as a paraphrase it is cold in Ithaca that is not matched by the latter.

There has been some discussion about whether a Temporal role should be recognized, similar to Range but time oriented. The strongest evidence I have seen for it is in meteorological predicates. Although forms like last week was rainy / it was rainy last week look as though they came from an underlying Range; other sets like Brisbane is sizzling in January / January is sizzling in Brisbane / it is sizzling in January in Brisbane argue for the recognition of a TEMPORAL (T) role as well.

BENEFACTIVE (B), also called APPLICATIVE, identifies someone or something on whom an action has a secondary effect. In many languages the manifestation of the Benefactive relationship is similar to that of the Goal relationship; semantically, Benefactive could even be thought of as a secondary goal. The idea of the Benefactive includes more than the etymology of the word implies, because it deals with ill effects as well as good ones. In Saramaccan, a creole language of Surinam (Grimes and Glock 1970), we find sentences like hén fufúu-man kó fufúu da-éen suní fú-en (then steal-man come steal give-him thing for-him) 'then a thief came and stole his things from him'. The Benefactive is regularly expressed in Saramaccan, as it is in a number of languages of West Africa that have similar structures (Pike 1966), by a verb meaning 'give' plus its object, used as the last verb phrase in a verb phrase string. This holds when an action harms a person as well as when it benefits him.

Like the Instrument, Benefactive may be a separate
predicate that becomes consolidated with the base predicate
to which it is attached... If so, I would take it to have
three arguments: an Agent, which must be coreferential with
the Agent of the base predicate, an Experiencer or Goal,
the one affected by the action of the base predicate, and a
Patient which is the proposition that contains the base
predicate itself.

FACTITIVE (F) is the relation of an action to its
result. The term should not be confused with 'factive',
used by the Kiparskys to express a restriction on certain
predicates to the effect that the propositions they dominate
assert a fact (as in Susie realized it was Monday, which could
be true on a Tuesday. Realize is a factive verb, believe is
not.). Factitive gives the outcome: the elephant (A)
trampled the lion (P) to a pulp (F), the glass (P) shattered
into a thousand pieces (F). Chafe (1970b.156 uses 'complement'
for this relation.

It is possible that expressions of extent may be
Factitive: we swam five hundred yards, cut the plank to
six feet, keep the question period under half an hour.
Where no process is involved, however, one could question
whether extent is Factitive. It could plausibly be Goal or
Range: the plank is seven feet long, the question period is
half an hour. Extent, like Temporal, may have to be con-
sidered a separate role.

ESSIVE (E) is the role used for identification. It
bestows a nominal status on the proposition to which it
belongs, allowing it to be referenced as a quantifiable
entity. In English it is linked with words like have and

be (Langendoen 1970.102). Essive may be the only case
associated with a predicate, as for example with paper in
the paper is torn but not in let's paper the bedroom, which
has its own Agent and Patient rather than as Essive. The
presence of an Essive triggers the use of nominal rather than
verbal patterns in surface grammar, even though other case
forms are present: our papering of the bedroom will have to
be postponed another week. The Essive lends itself to use
in establishing identification.

Combinations of roles are possible. In them a single
proposition expresses simultaneously more than one role
relationship. We have already seen how Agent, for example,
combines with Goal in buy and with Source in sell; we
bought bananas asserts that we did something as Agent, and
at the same time tells where the bananas ended up, whereas
we sold the picture also asserts that we did something as
Agent, but adds that the Patient picture was in our posses-
sion when the transaction began and was transferred out of
our possession. We is Source in this case rather than Goal.
Receive and send combine Goal and Source respectively with
Agent in the same way, as do get and put also.

Range and Patient may also combine. We can say,
for example, Ezra Cornell lived in this house or this house
was lived in by Ezra Cornell! The lack of a parallel pas-
sive for Ezra Cornell lived in this state suggests that
state is a Range element only, while house is Patient as
well as Range, as though something had happened to the house
but not to the state as a result of Ezra's residence.

As mentioned under Range, a number of languages of
the Philippines have a partitive form like 'he brought rice

from the field''that implies that some rice remains behind
in the field. The partitive contrasts with a total action
like 'he harvested the rice', which implies that he brought
all the rice from the field. This partitive effect seems
to be achieved by a principle of mutual definition between
Range and Patient (Ashley ms). If the field of action is
denoted by the Range, the Patient is taken implicitly to be
one or more of the objects that normally belong in the field.
In a sentence meaning 'I'll peel some of the mangos', for
example, the grammatical form of 'mangos' is such that it
has to be understood as expressing Range, not Patient; a
forced paraphrase to illustrate the relationships might be
'where the mangos are is where I'll do the peeling'. No
Patient can be expressed overtly in this arrangement.
Nevertheless, mangos are what the action happens to; they
get peeled. This could be taken as an obligatory application
of the principle (Chapter 11) that if a role element is
culturally conventional or is predictable from the context,
it need not be expressed.

        Sometimes role combinations are part of the meaning
of words, as in the case of sell and buy, which combine with
identical sets of role elements but coalesce the Agent with
Source in the first instance and the Agent with Goal in the
second. Normally, however, each role element is distinct.
Nevertheless, it sometimes comes about that two distinct
role elements denote the same thing in a particular context,
counter to the usual expectation. Mechanisms are available
to express this identity. For example, cut takes an Agent
and a Patient that are normally distinct. That is, the usual
expectation in the use of cut is that the Agent and the
Patient have different identities, in contrast with, say,
sell, where the expectation is that the Agent and the Source

are the same. For a particular instance of cut, however,
it may turn out that the Agent and the Patient are asserted
to be the same, as in he cut himself. The reflexive here
expresses the identity of Patient with Agent in a predicate
that normally assumes them to be separate.

The minimal expression of role relationships in
surface structure is the clause. Usually a predicate of the
kind whose meaning is partly defined in terms of role rela-
tionships corresponds to the verb of a clause, a predicate
adjective, or a predicate nominal, while the role elements
correspond to subjects, objects, and prepositional phrases
of various kinds.

Clauses may themselves, of course, be embedded
within other clauses and compressed in various forms.
Lexical propositions (that is, propositions whose predicates
are lexical predicates,   defined largely in terms of
role relationships) may therefore be expressed not only as
independent clauses but as dependent clauses like when we
get home, as embedded clauses like who cut down the tree in
the workman who cut down the tree, and even as adjectives
like sick in a sick elephant or as nouns like man in the man,
which corresponds to a more explicit identificational form
like the one who is a man (see Langendoen 1969 and 1970 for
an extensive discussion of the relation of propositions to
embedded and compressed forms of clauses).

Even though role relationships typically appear within
the clause, the same relationships may at times be expanded
into grammatical forms considerably larger than the clause
itself. John Austing (ms) describes how the expression of
some role relationships in Omie take one form within the

clause and another form between stretches of speech that
involve more than single clauses.

A study of the lexical propositions of any language
shows up sets of predicates that are similar in meaning but
that differ from each other in specifiable ways that find
parallels in other sets of predicates. The principle of
which parallel sets of predicates are grouped is that of
role sets (Fillmore's case frames), which will be discussed
in more detail in 10.2. All predicates that take, say, an
Agent, a Patient, a Factitive, and an Instrument have the
same role set. It is likely that any predicate in this
group will have a second role set consisting of Patient and
Factitive alone, and a third role set consisting of Patient,
Factitive, and Noninstigative Cause: as an example of the
first, take the host (A) broke the ice (P) into small pieces
(F) with a machine (I); the second, the ice (P) broke into
slivers (F); the third, the ice (P) broke into floes (F)
from the thaw (C). These three role sets are systematically
related; the differences among them are reflected in many
other predicates as well.

CHAPTER NINE
SEMANTIC DERIVATION

To continue on with the low level content relation-
ships out of which the more extensive semantic complexes of
discourse are built, we turn to some of the relationships
among role sets. These relationships can be expressed by
the notion of semantic derivation, in which a base predicate
that carries what we might think of informally as the main
meaning is combined with one or more of a small number of.
what Frantz calls abstract predicates. These predicates
are abstract in the sense that they are normally expressed
only in combination with base predicates, whereas the base
predicates can be expressed independently of any abstract
predicates. It is convenient to treat predicates that are
expressed by affixes as abstract predicates; but some ab-
stract predicates have no phonological form of their own.
What is an abstract predicate in one language might not be
one in another, though there seems to be great consistency
in the abstract status of at least a few. Abstract predicates
include the developmental that relates red and redden, the
agentive that relates the water boiled to we boiled the
water, and others that are taken up later.

Before discussing the kinds of abstract predicates
that can take part in a semantic derivation, it is useful
to categorize base predicates according to some common
semantic characteristics. Some predicates denote states,
like cold. Other denote processes, like melt and rain.
Still others denote actions, like walk. Others combine

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actions and processes, like bend. Finally, some predicates
denote experiences, like hear. Whether every predicate fits
into one of these five categories remains to be seen; but
these five are common enough that they keep turning up in
semantic discussions (Chafe 1970). They relate regularly
to lexical roles, but not in a one-to-one way: states and
processes both take Patient, actions take Agent, action-
processes take Agent for the action component and Patient
for the process component, and experiences take Experiencer
with or without Patient. Some states, which correspond to
the ones Chafe labels ambient, take Range but not Patient.
Some of the meteorological predicates mentioned in the last
chapter are ambient states like hot and cold. There are
also ambient processes with Range but not Patient: rain
and snow in the senses that are expressed as verbs tell
what is happening in a region, but do not assert that there
is something it is happening to.

The first abstract predicate to be combined with
base predicates is the developmental predicate.[1] The

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[1]Most linguists who write about semantic derivation
have used the term inchoative for developmental. Since that
term has a long prior history in classical grammar, used
in aspectual sense that denotes an action that is getting
underway or being undertaken, I prefer to leave it as an
equivalent to inceptive or ingressive, and use developmental
instead for change of state.

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developmental denotes a process that is defined by the
state that results. Redden, for example, denotes a
process of color change that has as its terminal point the
state red.

The agentive abstract predicate adds an action
component and the corresponding Agent role to a process.
In English there is a process predicate break as in the
rope (P) broke. It has an agentive counterpart, in this
case phonologically identical, that gives an action-process
as in the miner (A) broke the rope (P). The process to
which the action is added may itself be the result of a
semantic derivation like the developmental, as in the
chef (A) reddened the frosting (P). The agentive abstract
predicate adds an Instrument as well as an Agent: The chef
(A) reddened the frosting (P) with pomegranate juice (I).

Before going ahead with the discussion of other
abstract predicates it might be wise to pause and develop
a means of representing base and abstract predicates. The
full scheme of representation will be discussed in Chapter
13. Here, as in the discussion of proposition consolidation
given in connection with the Instrument role in the last
chapter, a proposition is represented as a tree. For typo-
graphic convenience it is turned on its side, with the root
toward the left and the leaves toward the right. Predicates,
whether base or abstract, are underlined and written immedi-
ately to the right of the node that dominates them, which
represents the entire proposition of which they are a part.
The arguments that go with a predicate are represented by
nodes beneath it, connected to the same dominating node as
the predicate itself. Role relationships are represented
as one-place predicates, each with its corresponding argu-
ment. Instead of being underlined, like base and abstract
predicates, they are capitalized according to the usual
convention. Some arguments could be broken down further
into propositions, but are not because their further analysis
is not pertinent to the example in which they appear. These

unanalyzed propositions are simply cited in their output
(phonological) form.   Figure 9.1 shows the relationships
of abstract and base predicates and roles in the state
red, and process redden, and the action-process redden.

The causative abstract predicate has already been
discussed in relation to the Agent role. It takes its own
Agent, independently of the Agent of the base predicate that
it dominates. Its Patient is the proposition that contains
the base predicate. When the transformation of proposition
consolidation is applied, the causative Agent is made the
Agent of the resultant proposition and the Agent of the base
predicate is shifted to another role; that is, for subsequent
transformations that involve the consolidated proposition,
the Agent of the base predicate is treated as though it.
were an Experiencer, Benefactive, or Goal (depending on the
role structure of the base predicate and probably on the
language) when the role-related arguments are matched to
surface grammatical categories.

As far as I know causative abstract predicates
never dominate state predicates directly. They combine
readily with process and action-process predicates, and
may also combine with action and experience predicates.
This is illustrated in Huichol, which has the following
forms:

   zúure 'red' state
   zʌʌ 'run out, terminate' process
   míe 'go' action
   qee or qéi 'carry in the hand' action-process
   zéiya 'see' experience[2]

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[2]See Grimes 1964 for a fairly complete description
of Huichol surface forms. The sounds of Huichol are stops k
p t c [ts] k q [kʷ] ʔ, fricative z retroflex , nasals m n,
flap r, semivowels w y h, vowels a e i u ʌ high back

(a)
    red
    Patient
    x

red (state)

(b)
    developmental
    Patient
    red
    Patient
    x

redden (process)

(c)
    developmental
    Patient
    red
    Patient
    x
    Agent
    y
    (Instrument)
    (z)

redden (action-process)
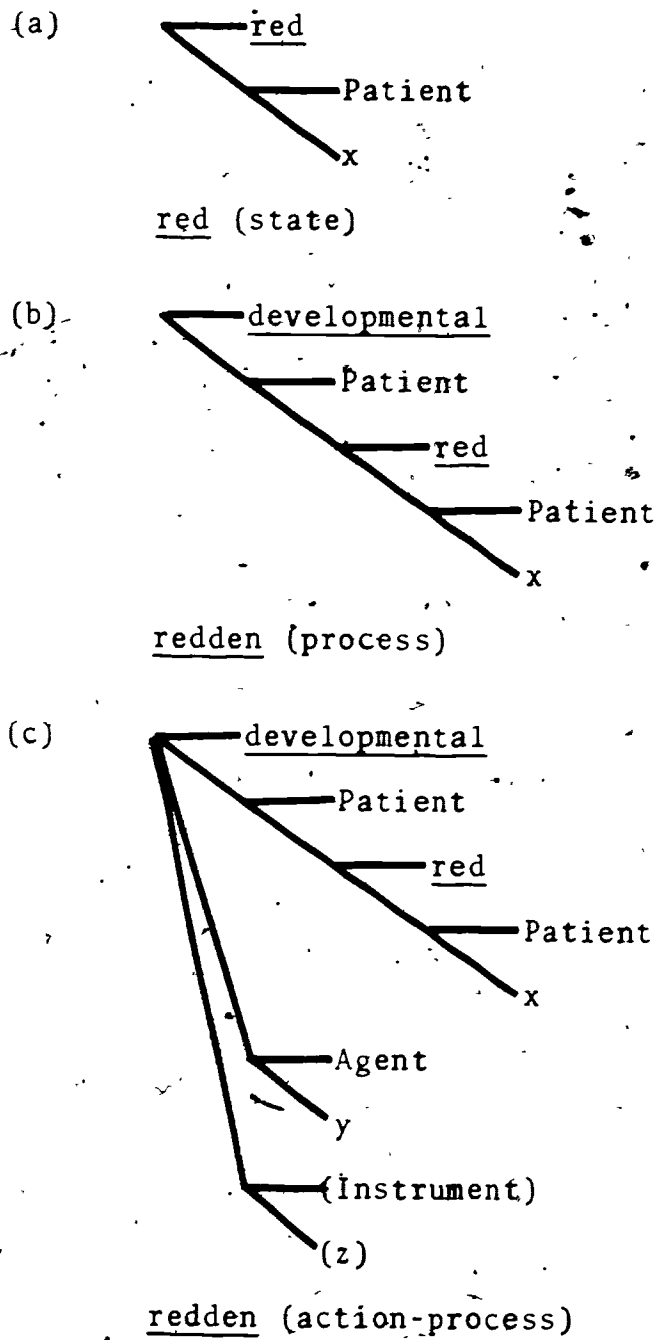
FIGURE 9.1. Base predicate red (a) with developmental
(b) and agentive (c) semantic derivations.

unrounded . Double vowels are rhythmically long. Each
syllable (CV, CVV) is high (´) or low (no accent) in tone.
Foot boundaries are indicated by + and word space. Huichol
is a Uto-Aztecan language spoken in the states of Jalisco
and Nayarit, Mexico.

The abstract predicates are manifested in surface forms
by affixes or by specialized verb phrases:

State-tʌ p-áa+-tʌa (State-ing did-this-way-go) 'go to
        be in such and such a state; developmental (this
        could be considered a specialized idiom)

-ya or -ríya 'agentive'

-tʌa 'causative', a suffix fortuitously similar in its
        phonological form to one form of the stem 'go' of
        the finite verb of the developmental phrase

        The following forms illustrate the possible
combinations of base predicates and abstract predicates.
X, Y, and Z are used instead of nouns to keep the examples
short. Modal, aspectual, object, and directional affixes
are used as needed, and morphophonemic changes are made
without further explanation. Hyphens separate morphemes:

X pʌ-zúure 'X is red' state

X zúu+ré-tʌ p-aa+-tʌa 'X turned red' developmental

Y p-íi+-zuuríi-ya X 'Y turned X red' agentive

Y X zuu+ré-me p-áa+-yéi-tʌa 'Y caused X to turn red'
        causative (-me indicates lack of surface subject
        agreement between components of the developmental
        phrase, whereas -tʌ showed surface subject agreement.
        yéi is the stem form of 'go' as a developmental that
        is appropriate in the causative.)

?Z p-íi+-zuuríi+-yá-tʌa Y X 'Z caused Y to turn X red'
        causative of agentive; is plausible but grammatically
        overloaded in most contexts.

X p-úu+-ti-zʌʌ 'X ran out; there is no more X' process

?Y p-íi+-zʌʌ-ríiya X 'Y terminated X' agentive (sounds
    forced)

Y p-íi+-zʌʌ-tʌa X 'Y caused X to run out' causative of
    process; for example, Y ate up all his corn supply (X).

X pʌ-míe 'X is going' action

?X ?uu-míe-tʌ p-aa+-tʌa 'X got under way' causative of
    action; sounds unnecessarily periphrastic, but does
    carry the inchoative idea of beginning an action.

Y p-íi+-yeiká-cí+-tʌa X 'Y caused X to go' (yeiká with
    the connective -cí is the stem form of 'go' that
    is appropriate with the causative.)

Y p-é-i+qei X 'Y carried X away in his hand' action-
    process

Z p-é-i+-qéi-tʌa Y X 'Z caused Y to carry X away in his
    hand; Z gave X to Y' causative

Y p-íi+-zéiya X 'Y sees X' experience

Z p-íi+-zéi-cí-tʌa Y X 'Z caused Y to see X; Z showed
    X to Y' causative of experience

Abstract predicates always leave a trace in the
surface form, otherwise there would be no justification
for recognizing them. In Huichol the trace is usually an
affix. In English the trace that signals an underlying
semantic configuration may be purely syntactic. Compare:

X is red (state)

X reddened (developmental, marked by -en, resulting in
    a process).

Y reddened X (agentive or causative, indicated syntactically)

Y made X redden (causative of abstract developmental)

Y made X turn red (causative of explicit, unconsolidated
    developmental)

Y made X red (causative, developmental implied but not
    expressed)

As mentioned earlier, the use of full words such as aux-
iliaries to express abstract predicates in English prob-
ably reflects a higher degree of attention the speaker
wishes to call to the abstract predicate itself.

There has been some discussion (for example, by
McCawley)   as to whether a causative abstract predicate
is needed for English, or whether a simple agentive is
sufficient to account for what goes on. Discussion centers
around the semantics of verbs like kill, which is semanti-
cally close to the phrase cause to die but not identical
with it. This difference could be expressed by making kill
simply the agentive counterpart of die, and leaving cause
to die as a causative that is not consolidated because of
a prominence element attached to the abstract predicate.

Terena, an Arawakan language of southern Brazil
(Butler ms), has a system of morphological marking that
shows that it is necessary to recognize both agentives and
causatives in semantic derivation. For example take a
stative stem xuna 'strong' that takes only a patient as in
xunati 'he is strong'. This stem has an agentive counter-
part with a prefix ko-/ka- 'agentive' and thematic suffixes
-k and -o, together with a pronominal object suffix -a
that represents the patient in the presence of the agent:
koxunákoati 'he is strengthening it'. From the agentive
form, however, a causative form can also be built:
ikoxúnakoati 'he is causing it to be strong'. The difference
in meaning is minimal; but in Terena it is regular through-
out two classes of verbs.

The explicit indication of both an agentive and a
causative derivation in Terena does not, of course,

constitute a proof that all languages have both abstract
predicates. It may be that English uses only the agentive,
and that what corresponds to the Terena causative is parceled
out in English semantics among the lexical predicates that
are symbolized as cause, make, and have; these predicates
cannot be consolidated, but are required to take sentence
complement constructions (Rosenbaum 1967). On the other
hand, since we are on the borders of what appear to be
universal semantic relations to be expected in all languages,
it may be that our study of English to date has not been
sufficiently profound to show how agentives and causatives
are related in English semantics, whereas that distinction
happens to be indicated obviously and consistently in
Terena and is therefore easily noticed.

Nonagentive probably needs to be given the status
of abstract predicate as well. This semantic element takes
away the Agent that would normally be present in the pro-
position that it dominates, whether that proposition contains
an action predicate, an action-process, or a causative com-
plex.

There is a great difference semantically between
a predicate which, though it normally takes an Agent, has
that Agent suppressed by semantic derivation and a predicate
which contains an Agent semantically, yet the Agent is not
represented in the surface form because it is recoverable
from the context. In they entered the room and found the
box there is no question as to who the Agent corresponding
to found is; by the regular deletion pattern of English it
has to be they for both verbs of the conjunction. If, how-
ever, there is no Agent, then English uses a passive-like
construction: many races were run in this arena, suppose

the box is never found, finally the cargo got shipped out
by air. Even though the ordinary lexical content of the
verbs involved suggests that it was people who ran the
races, didn't find the box, or shipped the cargo, the
reason no Agents are expressed is not that they are recov-
erable from the context, as was the case with the Agent of
found in they entered the room and found the box. The Agents
are missing because they are irrelevant to the semantics of
those particular sentences; to try to supply them from some-
where, even in the indefinite form of by someone, by various
people, is beside the point of what is being said. The
nonagentive abstract predicate expresses the speaker's
decision that the Agent should be left out of the semantic
picture even though the base predicate normally takes an
Agent.

        Nonagentives become clearer when we turn to langua-
ges where this kind of thing is indicated more explicitly.
Most of the indigenous languages of the Western hemisphere
have an inflectional pattern that is often called the passive
voice inflection for verbs. In very few languages, however,
does the parallel with Indo-European passives hold; the
Western hemisphere nonagentives (often called either passives
or pseudo-passives) permit no expression of the Agent.
Corresponding to an expression like 'John cut the meat with
a knife' there is a way of saying 'the meat got cut' or
even 'the meat got cut with a knife'; but it is quite rare
to find a language on this side of the Atlantic that permits
'the meat was cut by John' or 'the meat was cut with a knife
by John' within the bounds of a single clause. In many
languages of the hemisphere the nonagentive is like an
inverse for the developmental derivation, in that it defines
a state by telling the process, say cutting, that brought

about the state, while the developmental defines a process
by telling the state, say redness, that is the end result
of the process.

　　　　The Huichol forms given a few pages back illustrate
nonagentive semantic derivation. In Huichol the nonagentive
(indicated by -ri or -ya) requires the presence of at least
a Patient, so that there can be no nonagentive counterpart
to pure actions, as in the case of the English many races
(F) were run here. I repeat the agentive forms given earlier
to show how their nonagentive counterparts match. The noun
surrogates X and Y are shifted around syntactically to
eliminate the effects of a low level object deletion rule
(Grimes 1964) that might otherwise prove confusing.

　　　X p-úu+-zúurii+-yá-ri 'X got turned red'

　　　　　Y p-íi+-zuuríi-ya X 'Y turned X red' agentive

　　X zuu+ré-tʌ p-áa+-yéi+-tʌa-ri 'X was caused to turn
　　　　red' nonagentive causative of developmental

　　　　　Y X zuu+ré-me p-áa+-yéi-tʌa 'Y caused X to turn red'
　　　　causative of developmental

　　?Y p-íi+-zuuríi+-yá-tʌa-ri X 'Y got caused to turn X red'
　　　　nonagentive of causative of agentive, an unlikely
　　　　form

　　　　?Z p-íi+-zuuɹí+-yá-tʌa Y X 'Z caused Y to turn X
　　　　red', equally unlikely.

　　? X p-úu+-zʌʌ-rii+-yá-ri 'X got terminated' nonagentive
　　　　of agentive of developmental

　　　　?Y p-íi+-zʌʌ-ríi-ya X 'Y terminated X' agentive of
　　　　developmental, sounds forced

　　X p-úu+-zʌʌ-tʌa-ri, or more likely X p-úu+-zʌʌ-cí-tʌa-ri
　　　　'X was made to run out' nonagentive of causative of
　　　　process

　　　　Y p-íi+-zʌʌ-tʌa X 'Y caused X to run out' causative
　　　　of process

?X p-úu+-yeiká-cí+-tʌa-ri 'X was caused to go' nonagentive
     of causative of action

   Y p-íi+-yeiká-cí+-tʌa X 'Y caused X to go' causative
     of action

X p-ée+-qée-ya 'X got carried off' nonagentive of action-
     process

   Y p-é-i+-qei X 'Y carried X away in his hand'
   action-process

Y p-úu+-qéi+-tʌa-ri X 'Y was caused to carry X away in
     his hand, y was given X' nonagentive of causative
     of action-process

   Z p-é-i+-qéi-tʌa Y X 'Z caused Y to carry X away in
   his hand; Z gave X to Y' causative of action-process

X p-úu-zéi+yá-ri 'X got seen' nonagentive of experience

   Y p-íi+-zéiya X 'Y saw X' experience

Y p-úu-zéi-cí+-tʌa-ri X 'Y was shown X' nonagentive of
     causative of experience

   Z p-íi+-zéi-cí-tʌa Y X 'Z caused Y to see X; Z
   showed X to Y' causative of experience

The abstract predicates already discussed seem fairly
well established. Further thought needs to be given, how-
ever, to the status of what is readily recognized as a
nominal predicate. The nominal has the effect of adding the
Essive rôle to a predicate in much the same way that the
agentive adds the Agent role. The question that needs to be
answered about the nominal has to do with the circumstances
under which it is appropriate to nominalize. In terms of
general discourse structure there is a discernable tendency
for identificational information to be nominalized; but this
is by no means the end of the matter. English, and the
Indo-European languages in general, seem to have a propensity
for frequent use of nominalized propositions that is shared
by few other language families in the world. Where we would

say the explosion occurred at noon, the corresponding verb-
oriented expression in many other languages would be on the
order of 'something exploded at noon'.

One factor in the use of nominalizations seems to be
the relative prominence of different propositional elements.
Content elements that are more central to the staging of
what is being said are less likely to be nominalized, while
other content elements that are being given less attention
at the moment are candidates for the Essive case. The use
of nominalizations in discourse therefore seems to be related
to thematization, discussed in Chapter 21.

Another way to approach nominalization is to notice
that the Essive role ordinarily carries with it the notion
of embodiment of a state. Any proposition can be indexed
as a whole, as for example with it or that, and in some cases
can be quantified. This referential permanence, by which
we can keep referring back to the same state of affairs as
well as to the same object, may be a factor in the nominal-
ization of propositions. Those propositions whose permanence
as a referential entity the speaker wants to call attention
to may be the ones to which the speaker attaches the Essive;
but much study is needed here. Perhaps each of us 'gives to
airy nothing a local habitation and a name'.

Referential permanence, expressed by the Essive, is
part of the lexical structure of many predicates that are
customarily expressed as nouns like house and moment. On
the other hand, there may be a denominal abstract predicate
which, in the same way as the nonagentive removes an Agent,
takes the Essive from a predicate that normally requires it:
all the riders were booted and spurred is a denominally based
expression related to the nouns boot and spur.

The addition of an Essive does not preclude the presence of other roles with a predicate. Even in the nominalized form we have a run down the slalom course with my new skis, the generals' 1944 bomb attempt on Hitler's life, and the like. On the other hand, role information associated with a predicate that takes the Essive is so often redundant that it can be omitted as old information. The frequency with which additional roles are actually expressed with Essive predicates is on the average likely to be lower than the frequency with which additional role information is given with the non-Essive counterparts of the same predicates.

The interaction between the Essive and other cases is not always the same. English trainer is a nominal form based on the Agent when it refers to the person who tapes the football players' ankles, but based on the Range when it refers to an aircraft in which a flight instructor imparts instruction to a student pilot. Strainer, on the other hand, usually refers to the Instrument with which a cook takes water out of food; but it can have to do with the Agent, either alone as in this wrestler is a grunter and a groaner and a strainer, or with the Agent and other roles as in the press officer is a real credibility strainer. Neither example of the agentive semantics of this noun is very likely; yet Agent is the most likely with trainer.

Some sets of predicates are related closely by their role similarities. There are, for example, sets of predicates that have the same role relationships but differ in the way the relationships are staged.[3] As far as content is

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[3]Other differences in meaning go along with the differences in thematic properties. Like does not mean

exactly the same thing as please, nor are husband and wife
completely synonymous. The point is that those differences
in meaning are not related to the role system, but rather
go along with the side of the role relationships that the
speaker wishes to stage for the hearer. See chapter 21.

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concerned, I like your new coat involves an Experiencer who
is reacting to a Patient as stimulus; so does your new coat
pleases me. It is the point of departure that is different.
The same holds for Jane is Hal's wife and Hal is Jane's
husband; the same relationship is presented to the hearer
from two different angles.

These pairs of converse predicates should be compared
with other predicates for which role relationships are con-
stant and there are distinct possibilities of staging, but
for which the presence of a single lexical representation
suggests that there may be no further difference in meaning
associated with each thematization. Rent expresses one of
these: Karen rented the apartment from Mrs. Anderson and
Mrs. Anderson rented the apartment to Karen describe the same
situation staged in two different ways. The back yard is
swarming with mosquitoes, mosquitoes are swarming in the back
yard, and there is a swarm of mosquitoes in the back yard
are thematically distinct but have the same roles associated
with the predicate.

CHAPTER TEN

OTHER RELATIONSHIPS AMONG PREDICATES

1. ASSOCIATIVE RELATIONSHIPS

Part of the meaning of a lexical item involves its being related to other propositions in ways that are modeled here in the form of specialized predicates known as roles. To know the role structure of a lexical item does not imply knowing its meaning, however; it implies only that we know some of the essential elements of its meaning. Different lexical predicates like fold and snap have identical role structures, and a single lexical predicate like hit may take a variety of role structures.

Another part of the meaning of a lexical item involves its being related to other lexical predicates in other ways than through role relationships. A general term for these other relationships is associative, though as we shall see they can be further divided, so that the term for them may drop out of use as soon as the picture gets a little clearer.

Inclusion relationships are an important property of lexical items. A felt tip is one kind of pen, which in turn is one kind of writing instrument, which is an implement or tool, which is an artifact, which is a thing. There are pens that are not felt tips, writing instruments that are not pens, implements that are not writing instruments, artifacts that are not implements, and things that are not artifacts. Harold C. Conklin was one of the first (1955) to show how

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inclusion hierarchies differ from language to language.
Dixon (1971) cites a type of ethnolinguistic evidence for
inclusion from a language situation that brings these hier-
archies to light in a forceful way. Quillian (1968, 1969)
finds that each unit in his model of semantic relations must
include a pointer to another unit that is the superset unit
of the first; in other words, a unit that represents the next
most inclusive level of the inclusion hierarchy. Both he
and McCalla and Sampson, who follow up his work (1972), find
that the ability to trace superset chains is essential in
resolving ambiguities and interpreting texts.

Another kind of semantic relationship among lexical
items is the componential relationship. Components express
analogical relationships among sets of meanings: saw is to
knife as drill is to awl, or grandfather is to father as
son is to grandson, and so forth. Componential analysis
developed from the work of Floyd G. Lounsbury (1956) and Ward
H. Goodenough (1956), with a useful summary by Wallace and
Atkins (1960).

Dixon (1971) points out that this kind of analysis,
which is closely related to the use of semantic features by
many linguists, works well for a part of the vocabulary that
he labels nuclear, but is not particularly useful for the
nonnuclear vocabulary, which can instead be defined by using
nuclear words. The differences between two nonnuclear words
that are defined in terms of the same nuclear word cannot be
analogized to other pairs of words, so that the notion of
semantic components breaks down there. Glock and I have also
pointed out (Grimes and Glock 1970) how even obvious semantic
components like the progenitor relationship that is part of
the analogy grandfather : father :: son : grandson cited

above apply only within a limited range rather than through-
out the vocabulary. One would, for example, inquire only
playfully about the progenitor component when investigating
the meanings of a set of words like house, shed, barn, sky-
scraper, church, store. Nevertheless, for limited parts of
the set of lexical elements, there are relationships that
enter into the differences between many sets of pairs, so
that semantic features or componential structure is a factor
to be recognized wherever it is pertinent, but not to be
forced where it is not.

Some inclusion hierarchies are formed by washing out
or neutralizing a distinction that is expressed by a semantic
feature. In the press recently, for example, I notice that
a professional society recently had its sessions conducted
by chairpersons, since it was felt to violate the spirit of
the women's liberation movement to have one session run by
a chairman and the next by a chairwoman, as was customary
in the olden days. The latest news tells of a meeting held
under the gavel of a chairone, awesome indeed. The meaning
of person is related to the meanings of man and woman, but
without the male-female feature that also distinguishes boy
from girl as kinds of child, ram from ewe as kinds of sheep,
and so on through a sizable chunk of vocabulary.[1]

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[1]Another English expression for the next level up.
the hierarchy of inclusion from man/woman is man: to point
out that man's days on the planet may be limited by pollution
or by nuclear war does not imply that the earth will even-
tually be populated by women. The use of one word to express
units at more than one level of an inclusion hierarchy is
not uncommon.

We are aware of <u>connotations</u> in meaning, but as yet
we know very little about integrating them into linguistic
theory. Connotations have to do with the emotional and
evaluative overtones of words. We are uncomfortable with
them probably because in most of linguistics we tend to be
happy if we can make a little sense in talking about concrete
denotative meaning. Nevertheless, connotations are always
with us. Even Aristotle (<u>Rhet</u>. 3:2) commented that 'pirates
nowadays call themselves "purveyors"'.

Osgood, Suci, and Tannenbaum (1957) have developed
a measurement technique known as the <u>semantic differential</u>
that makes it possible to compare connotations. Their tech-
nique locates concepts in a space dominated by three dimen-
sions: evaluation (exemplified by ratings on scales like
good-bad, positive-negative, or pleasant-unpleasant, potency
(hard-soft, heavy-light, strong-weak) and activity (active-
passive, fast-slow, excitable-calm). Words with similar
connotations cluster in the same region of the semantic space.
While the semantic differential does not provide an explan-
ation of the phenomenon of connotation, it does provide a
way of talking about similarities in connotational meaning.

Linguistically it is attractive to think of conno-
tations as one kind of associative tie between lexical elements.
There are fairly standard evaluative connotations attached
to many words, for example, while others are neutral or take
on their evaluations from the context along. In one political
speech, for example, I find the following:[2] Twelve terms

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[2]Vice President Spiro Agnew, quoted in <u>Time</u>, 1970
May 11.

stand for things that generally ha a good connotation:
firm handling, concise, clear, vigor, heritage, spiritual,
courageous, standing up for, rights, great, majority, and
possibly architects. Fifteen stand for things that generally
have a bad connotation: impressionable, victim, ptomaine,
disparage, irretrievable, appeasement, capitulation, sellout,
treason, folly, crisis, buckled under, extortionist, non-
democratic, and mob. Eight terms are normally more neutral
than these in their use in English in general; but in this
discourse they take on the emotional coloring of Good
Things: our system, enforced, tough, children, deal,
modest, traditional, and silent. Thirty other terms, a
number that is consonant with the general tone of the
speech, are basically neutral but in this context are given
negative connotations: revolution, radical, spawning,
sanctuary, susceptible, or (used to state an equivalence
between a neutral term and a loaded term), left, dispensed,
theatrical, problem, confronted, turbulent, patently, squads,
moral, idealistic, thing, junior, secreted, smiling, benign,
challenge, next, waving, non-negotiable, demands, pitching,
brown shirts, white sheets, lounges.

The text discussed in the last paragraph illustrates
another point about connotative meanings: to a greater
extent than any other aspect of meaning, they are idiosyn-
cratic. Anyone who reads the same text may query my reactions
to the way particular words are used, or even to whether
their good and bad connotations are conventional or by
context. I am not surprised when someone disagrees with my
personal readings (although I can report general agreement
with the students I tried the speech out on); but I will be
surprised if anyone fails to find some division of terms
into good by convention, good by context, bad by context,
and bad by convention.

The reason why connotations differ probably goes back to the emotional colorings of the circumstances under which each of us learns a word. How we feel about a situation is not as easy to calibrate against other people's feelings as our perception of the visible components of the situation is to calibrate against other people's perceptions of it. As a result, emotional and evaluative associations tend to be less standardized than are other kinds of associations that enter into our semantic reactions.

The idiosyncratic nature of connotations is only part of a more general problem: how in the world does anybody ever understand anybody else? Even in the supposedly straightforward area of so-called denotative meaning, where definitions can be given and tests made, speakers of the same language do not always mean the same things by the same words. This, like emotive reactions, probably goes back to the observation that everybody learns everything under different circumstances, so that there is no way of guaranteeing compatibility between the semantic systems of any two people. The amazing thing, which I do not pretend to be able to account for since as a linguist I take it as given, is that the area of compatibility is great enough that any effects of incompatibility can eventually be overcome by talking enough.

To illustrate how idiosyncratic elements are present in all kinds of meaning, pose the following questions to married couples of your acquaintance: (1) Is zero an even number? (2) Who are your second cousins? (3) Is turquoise a kind of blue or a kind of green?

Not all kinds of associative ties are capable yet
of being analyzed and classified even as well as connota-
tions. The loosest type of associative tie is the collo-
cation. A collocation could be thought of as a relatively
high probability that if one concept is present in a dis-
course, another one will be as well. For me, mention of
spring (the season) generally elicits some talk about grass
and warmth and buds, and talking about carburetors calls
for tuneup.

The associative relationships I have mentioned may
possibly be divisible into two kinds: bounded and unbounded.
If Dixon is right (1971), the extent to which semantic
features or components in a componential system apply to the
study of meanings is strictly limited. For any area of
vocabulary there are a few components that operate to
distinguish nuclear words. Even taken over all areas of the
vocabulary the number of components is bounded. In the same
way, if role relationships are taken to be the same in
kind as other associative relationships (as is implied by
Quillian's model), the number of role relationships is not
unbounded. It is limited to not much more than the list
given in Chapter 8. Inclusion hierarchies may be bounded
in the sense that the superset chain (like Chippendale :
chair : seat : furniture : artifact : thing) of any lexical
item may have a finite maximum length. Going in the other
direction from more inclusive to less inclusive, however,
there is a sense in which the inclusion hierarchy may not
be bounded. It seems as though for many superordinate or
more inclusive elements in the hierarchy, we can always
come up with one more subordinate or less inclusive element
that they include; if this is so, that dimension of the
inclusion relation may not be bounded.

As far as connotations and collocations go, however, there is no limit on the number of associations that a word can have. This is one reason why a model of semantic structure cannot escape taking in everything we know about everything. Furthermore, what we know and feel about every-thing changes constantly, even during a discourse, and that change in itself is an important element in accounting for the surface form of discourse as we shall see in Chapter 19. But as I said in Chapter 1, the way to confront the encyclopedia problem is not to duck around it and talk only about those aspects of language for which we do not need to know everything about everything, but to develop a con-ceptual scheme that contains generalizations powerful enough to permit us to manage a semantic system that embraces everything.

2. AREAS OF MEANING

Lexical predicates have different meanings, yet some are to a certain extent similar in meaning. In order to talk about how predicates differ or how they are similar it is useful to begin with those differences and similarities that can be attributed directly to the role relationships and associative relationships we have just discussed.

Many predicates take identical sets of role rela-tionships. Fillmore, for example (1970), characterizes English break, bend, fold, shatter, and crack as all having an Agent, an Instrument, and (using the terminology of this book rather than his, which is equivalent) a Patient. Hit, slap, strike, bump, and stroke, on the other hand, can take an Agent, an Instrument, and a Range. The first set all denote some change of state in the Patient, the second, contact with a surface indicated by the Range.

Many predicates are capable of taking more than
one set of role relationships in their arguments. Break,
besides taking Agent, Instrument, and Patient (which I
shall abbreviate as A I P) as in I broke the window with a
brick, also takes A P as in I broke the window, I P as in
the brick broke the window, and P by itself as in the window
broke. Fillmore symbolizes these four sets of roles that
go with change of state verbs using the common convention
of parentheses to indicate optionality: break (A) (I) P.
Surface contact verbs also take multiple role sets, but not
the same sets as the change of state verbs. We can say I
hit the nail with a hammer, A I R, or I hit the nail, A R,
or the hammer hit the nail, I R. There is however, no
form with R alone; *the nail hit (the prefixed asterisk
indicates a nonexistent form in the sense discussed) is not
parallel to the window broke, but reflects still a different
set of roles, probably P R, parallel to the airplane landed.
Fillmore (1968) proposes a notation using linked parentheses
(A[I) R for the Agent-related part of the role structure
of hit. The linked parentheses show that at least one of
the pair A, I must be present as well as R.

It is tempting to try to classify predicates by
the role sets that they take. It soon becomes clear, how-
ever, that clear cut groupings of predicates like the change
of state group and the surface contact group are relatively
rare. The reason for this is not hard to find. If we
assume eleven standard roles, as we did in the first part
of the chapter, then the number of possible role sets is
2^{11} or 2048. Even supposing that only a quarter of these
combinations actually are used in a language, those 512 or
so are numerous enough to suggest that classification alone
is not an end in itself. Furthermore, since many predicates

have more than one role set that they can take, each
different combination of role sets yields a different class
of predicates. _Seem_, for example, takes P like _break_;
but it lacks the other three role sets that _break_ has.
The study of role systems, then, is not classificatory in
any useful way, although classification is not impossible
(and can, in fact, be done by computer).

What, then, is the point of recognizing role
systems, if they yield a classification that is too rich to
tell us anything? To answer this we must recognize first
that a categorization of predicates in terms of role sets
is not an air tight thing. We change the role set asso-
ciated with a predicate when it suits us if we think we can
get away with the innovation without losing the hearer.
"But me no buts" is an extreme example in which a rhetorical
predicate whose arguments are usually two or more complex
propositions is given an Agent, a Patient, and a Goal for
the nonce. Less radical are things like climb me up the
ladder or soup the leftovers, both of which are easily
recognized as nonstandard, or in the narrow sense ungram-
matical, yet each of which would certainly elicit the correct
reaction from most speakers of English if given as a command.
There is, I think, everything to be gained by trying to
build our theory of language in such a way that it not only
characterizes the normal, expected combinations of elements
that are the bread and butter of everyday speech, but also
recognizes that speakers have liberty to innovate within
certain bounds, and that when they do innovate, the way in
which they are understood is also systematic.

There is, then, a certain invariance in meaning
inherent in each role relationship, whether it is being used

in conventional association with a predicate or whether the
speaker has decided to put things together in a nonstandard
way. Furthermore, there seem to be characteristic patterns
of role relationships that stick together. For example,
for change of state verbs the (A) (I) complex of role sets
seems to be interchangeable with a ·(C), or Optional Non-.
instigative Cause. Parallel to I broke the window with a
brick, A I P, we have the cold broke the window, C P, with
the observation that the cold is not Agent, since it is not
performing any action or in any sense acting deliberately;
nor is there any conceivable instrument we can think of
that it might use. Neither is it Instrument, since there
is no normal sense in which its use could be attributed to
some Agent. (In suitable contexts such as fairy tales cold
could be used by somebody to break something: the sorcerer
broke the castle walls open with cold. This, however, is
the full scale Agent-Instrument pattern, not Non-instigative
Cause.)

Some role relationships take precedence over others
in regard to their mapping to surface grammar. In English,
for example, unless there are special conditions of staging
and informational coherence (Halliday 1967a, b), the Agent
of a proposition will be the surface subject; if there is
no Agent, the Instrument will be the subject; and if there
is no Instrument, the Patient will be the subject. Linguis-
tics has a long history of classifying surface grammatical
patterns (Postal 1964). It therefore comes as a mild
surprise to some to find that the classification of the
semantic categories that stand behind surface patterns is
many times more complex, so much so that it ceases to be
useful.

Role sets, however, are not assigned helter-skelter
to predicates. As a matter of fact, many of the multiple
role sets associated with predicates are interrelated in
just the ways that in Chapter 9 are attributed to semantic
derivational processes. We can take break, for example,
as having an underlying process predicate that takes only
the Patient, as in the window broke. The agentive deriva-
tion of this actually adds not just the Agent, but the
whole (A) (I) or (C) complex.

It is customary in lexicography to speak of various
areas of meaning of a word. In dictionary making each of
these areas is represented by a subentry (Robinson 1968).
One of the ways in which areas of meaning are distinguished
is by role sets. Break as something that can happen to a
stick, corresponding to P, belongs to a different subentry
than break as something that a person can do to a rigid.
object, possibly aided by a tool, corresponding to A P
and A I P. There are other ways of distinguishing
subentries, of course; different kinds of contexts entail
different areas of meaning of a word. Key as an implement
for unlocking a door is not the same area of meaning as key
for following a map or key for keeping a wheel from turning
on a shaft. Even where contextual differences are involved,
however, there may be associated differences of role sets.
In sports like basketball, break is used to describe a quick
maneuver involving change of direction, and in that context
takes an Agent and possibly a Range, but no Patient or
Instrument.

CHAPTER ELEVEN

THE ARGUMENTS OF PROPOSITIONS

Role relationships hold between a predicate and its
arguments. We have looked at predicates, at least to the
extent that they are involved with their arguments, and we
have looked at the role relationships themselves. Now we
will look at the arguments.

1. CONSTRAINTS INVOLVING ROLES

The number of arguments that a predicate can take
ranges typically from one, as in the snow (P) is white to
five or six, as in the bellhop (A) brought me (G) a note
(P) from the lady (S) on a tray (I), which load down the
available surface structures enough that one begins to
wonder whether the Instrument is an Instrument or part of
a strange sounding Source, the lady on a tray. It remains
to be explained why no lexical predicate takes more than
six arguments; the answer undoubtedly has to do with the
overloading of memory by having too many daughter nodes
attached to a single parent node. Furthermore, when a
predicate is capable of taking more than one role set, the
sets often differ in the number of arguments involved. The
familiar change of state complex {(A) (I) | (C)} P F permits
two, three, or four arguments: P F the jar broke to pieces,
A P F she broke the jar to pieces, I P F the hammer broke
the jar to pieces, C P F the noise broke the jar to pieces,
and A I P F she broke the jar to pieces with a hammer.

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There are two senses in which it can be said that
an argument is optional. For an accurate characterization
of the role system of any predicate it is necessary to be
able to distinguish both. An argument may be optional in
the sense that it may or may not be part of the meaning
of a particular use of the predicate. A, I, and C in the
example given in the last paragraph are semantically
optional in this sense; when they are there, they are part
of the meaning, and when they are not, there is no implica-
tion that they are 'understood' or in some sense to be
taken into account. In the first example above, the jar
broke to pieces, there is no implication that an Agent is
lurking in the background with an Instrument in his hand,
or possibly even that there is a Noninstigative Cause to be
found. The jar broke, and that is that.

The other sense in which an argument can be said to
be optional I will call cohesive optionality or deletability,
in the sense developed in Chapter 19. Here an argument is
part of the semantics, but is presumed to be known to the
hearer either because it is part of the situation of speaking,
because it is the culturally expected argument for that
situation, or because it has been mentioned recently enough
that it does not need to be mentioned again. Yet it is
part of the meaning; the fact that it is not expressed
falls under the general principle of recoverable deletion
(Chomsky 1965.144-146). All gone? uttered with one hand on
the coffee pot involves a Patient, the coffee, but it is not
expressed because it is pointed to nonlinguistically in the
situation of speaking. He's eating has an explicit Agent,
but a Patient that is deleted because it is the culturally
expected Patient for that action, and there is no attention
being called to it, He's eating fried eels would probably

not be subject to deletion, at least at our house, because
the Patient is unusual enough that it does not come under
the cultural criterion for recoverability. In the same
way, Factitives are usually not expressed unless there is
something special about them, on the grounds that the
expected results of most actions are widely known. We
rarely bother with the Factitive in something prosaic like
the jar broke to pieces unless we do it to make the whole
action prominent; we say the jar broke, assuming that every-
one knows that pieces were what it broke into. On the other
hand, if it were the case that the jar broke into half-inch
crescents, something a little out of the ordinary for jars
breaking, we would express the Factitive. Finally, in I
went to the store and bought potato chips, we would say that
bought has an Agent, but that since this Agent is the same
as that of went and the two are grammatically conjoined
within a sentence, the Agent of the second verb does not
have to be expressed. In other cases there may be a reduced
form of expression such as pronominalization, in which only
minimal information is given about an argument because the
rest coheres from the preceding context.

The interrelationship of arguments within role
sets has already been mentioned. One kind of condition is
a threshold condition symbolized by linked parentheses:
(A|I) R in the role specification of surface contact verbs
requires that at least one of the arguments in the linked
parentheses be present: A R the batter hit the ball, I R
the bat hit the ball, or A I R the batter hit the ball with
the bat, but never R alone: *the ball hit.[1] Another kind

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[1]This does not say that the ball hit is not possible
in English. It is possible, but only if the ball is

Instrument in this role set or Patient in a different role
set in which <u>hit</u> is not a surface contact action but a
description of processes affecting a projectile.

of condition is a disjunction, symbolized by braces $\{(A)$ (I)
$| (C)\}$ P F for change of state verbs (using a vertical line
to separate the terms of the disjunction; this is equivalent
to writing one term above another and using large braces to
enclose them). This means that either one member of the
disjunction will be used or the other, but not both. Many-
termed disjunctions are also possible in which at most one
member of the disjunction can be used.

In the notation I am using here, simple parentheses
() always indicate semantic optionality. If the role inside
the parentheses is chosen, it is part of the meaning; if
it is not chosen, then we are in a different area of meaning
that does not involve that role. Linked parentheses (I)
indicate a different kind of optionality, in which any
argument may be left out of the meaning, but at least one
must be present. Braces with vertical separators
indicate still a different kind of optionality, in which one
and only one of the arguments must be chosen. These kinds
of optionality are related by an algebra of their own, so
that the characterization of roles for change of state
verbs can be expressed a little more precisely than in the
last paragraph as $(\{(A|I) | C\})$ P F.

One of the less fruitful consequences of earlier
generative transformational grammars was the ironfisted
way in which they claimed that you couldn't say this and
daren't say that. The starred form, which I have used
sparingly for things that are obviously impossible, at

least in the sense I have specified for them, became a kind
of invitation to instant controversy: your grammar says
you can't say this, but I said it last Thursday, therefore
your grammar is wrong. Once the fun and games side of
counterexamples dried up, we began to wonder if the prevalence
of counterexamples for nearly any starred form in the liter-
ature might not mean that a theory of grammar that rejected
starred forms so roundly might not be too rigid. It was
about this time, the late sixties, that people began going
around muttering things like "All Chomsky grammars are square."

         I think that our theory of language has now come
to a point where we do not have to tie ourselves in knots
on the subject of grammaticality. We have moved to a view-
point at which, instead of saying, "Because certain lexical
elements are specified in such and such a way, it follows
that Example X is ungrammatical," we have loosened up to
the point where we can say, "Any semantic configuration of
a certain type has the following possible forms of surface
expression, and other configurations have other forms. We
would have expected, judging from the words in Example X,
that it belongs to Semantic Configuration A; but since it
did not appear in any of the forms that are normal for A,
we must suppose that the speaker constructed it in Semantic
Configuration B, as he was at liberty to do, and its surface
form was therefore appropriate for B." In other words,
when we talk about things like the role relationships and
role sets of a particular lexical predicate, all we are
saying is that most of the time the meaning of the predicate
involves those role sets. If a speaker wishes to, however,
he can use any role sets that he thinks will get him under-
stood. For example, the predicate that underlies English
seem takes an Experiencer, the one who perceives things in

a particular way, and a Patient which is itself a sentence-
sized proposition. If we construct a thoroughly barbaric,
non-English sentence like *why did you seem to me that he
would be here by now?, which has an Agent where no Agent
should be, a good grammar does more than slap us on the
wrist; it shows that the sentence is unusual, pinpoints the
way in which it is unusual, and says in effect, "All right,
I know we don't normally treat seem as agentive; but if you
are determined to do so, then I will admit that you have
given it the surface form it ought to have, just as though
you had used its conventional counterpart represent or the
explicit causative make seem. Next time, however, you may
be better understood if you say why did you represent to me
that he would be here by now? or why did you make it seem
to me that he would be here by now?"

        Roles that are added to the conventional role set
for a predicate without further adjustment can be called
supernumerary roles. The Benefactive is the most common
supernumerary role. It can be added to almost anything:
the grass is green for me, shut the door for me, the rain
in Spain stays mainly in the plain for them. Factitives
can be added to predicates that normally do not have them:
they walked all out ('with the result that all their energy
was expended'). The notion of supernumerary roles is a
special ad hoc case of semantic derivation.

2.   PSEUDO-PREDICATES AND CONSOLIDATION

        In Chapter 9, where I referred to developmental,
agentive, causative, nonagentive, nominal, and instrumental
patterns of semantic derivation, I discussed the difference
between causative and agentive in considerable detail in

order to clarify the Agent role itself. As a result I
attempted to justify eliminating Causer as a role separate
from Agent. The thought behind both discussions was that
there are a small number of semantic relations that can be
considered to be predicates themselves, but that are even-
tually coalesced with the base predicates that they dominate.
The causative, for example, has its own Agent and its own
Patient, which is a proposition in its own right. The base
predicate, the one in the proposition that is Patient of the
causative, amy also have its own Agent. When the causative
and the base proposition are coalesced, however, as expressed
in a transformation of proposition consolidation like the
one proposed by Frantz (1970), the Agent of the original
base predicate is reassigned to another category like Goal
or Benefactive.[2] In all further treatment of the coalesced

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[2]David Cranmer suggests investigating whether roles
that are readjusted when they are consolidated are always
moved into a role that is not otherwise taken up. If this
is not the case, the conflict of roles would result in a
special kind of ambiguity which could appropriately be called
consolidation ambiguity.

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form it behaves as though it represented the semantic role
into which it has been moved, so that no problems arise
from having two Agents in the same proposition. I believe
that proposition consolidation is the mechanism behind Pike's
notion of double function (1967), in which he notes that
him in I told him to go is simultaneously an adjunct of told
and the logical subject of go.

Huichol illustrates the effects of consolidation
and the resulting role reassignment more readily than English,

since in Huichol there are explicit affixes that distinguish
between the causative derivation (-tʌa) and the agentive
derivation (-ra) in which an Agent is added to a [blotted]ee
directly. The Huichol stem qee 'carry', for exa[blotted]
normally takes an Agent for the person who does the carry-
ing, a Patient for the thing carried, and a Goal, which can
denote either the destination to which the Patient is carried
or the direction in which it is carried. In cʌʌkʌ p-e-i-
qei paapáa (dog assertion-away-3singularobject-carried
tortilla) 'the dog carried away a tortilla', cʌʌkʌ 'dog' is
the Agent, paapáa 'tortilla, maize cake' is the Patient,
and the Goal is expressed by e 'away'. Cʌʌkʌ 'dog' is in
cross reference with the third person singular subject of
the verb. Paapáa 'tortilla' is in cross reference with the
third person singular object prefix i-. This role set,
which is one of several related ones that are appropriate
to qee 'carry', can be boiled down to a compact representa-
tion on the order of qee A P G.

Role sets are really abbreviated designations for
requirements that each argument of a predicate be a proposi-
tion whose predicate is a particular role predicate. The
arguments of the role predicates themselves are either
referential indices, which we will take up in Chapter 12,
or other propositions whose internal structure does not
concern us further right now. In other words, the designa-
tion qee A P G says that propositions of which qee is the
predicate normally take three arguments; one is a proposi-
tion with Agent as its predicate, another is a proposition
with Patient as its predicate, and the third is a proposition
with Goal as its predicate, without saying anything further
about the arguments of those propositions. It is like a
skeleton form

qee 'carry'
Agent
?
Patient
?
Goal
?
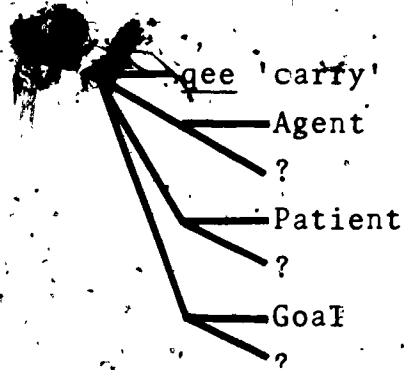
where the question marks indicate the places where other
propositions may be added.

It is useful to be able to distinguish between the
skeleton form of a predicate and the use of that predicate
in a particular semantic production in which the blanks
that are associated with it are filled in. If qee A P G
stands for the empty form of the predicate itself, qee
A P G (a,b,c) is an appropriate way of designating an in-
stance of qee in which some proposition a is assigned as
the argument of the Agent predicate that qee dominates, b
is assigned as the argument of the Patient, and c as the
argument of the Goal. The arguments are matched in the
order in which they are listed, and since it is characteris-
tic of role systems that no predicate has more than one
argument of a given type (remembering that an argument that
designates a group is a single argument even though it may
consist of two or more parts itself; John and I went to
town, for example, contains a single Agent, John and I),
there is no problem of duplication.[3] The example given

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[3]The notation for matching specific values like
a, b, and c with variables like A, P, and G is a simplified
form of the lambda notation proposed thirty years ago by
Alonzo Church and modified for the representation of recursive
functions by John McCarthy (McCarthy 1960).

earlier would be represented as qee A P G (cʌʌkʌ, paapáa, e-).
Because we are not at this point interested in the further
propositional structure of the arguments of qee, we simply
list the forms used, as usual (Langendoen 1969).

Putting the causative together with a predicate
like qee involves a double level of composition. The
dominating proposition has the form causative A P R. Its
Patient is the proposition qee A P G with its own arguments.
The composite production has the form causative A P R
(ʔuukáa 'woman', qee A P G (cʌʌkʌ 'dog', paapáa 'tortilla',
e- 'away'), u- 'there'. The second argument of causative
matches the complete proposition cited earlier with qee
as its predicate. A tree representation of the causative
formation would be

```
            causative
            Agent
            ʔuukáa 'woman'
            Patient
                qee 'carry'
                    Agent
                    cʌʌkʌ 'dog'
                    Patient
                    paapáa 'tortilla'
                    Goal
                    e- 'away'
            Range
            u- 'there'
```
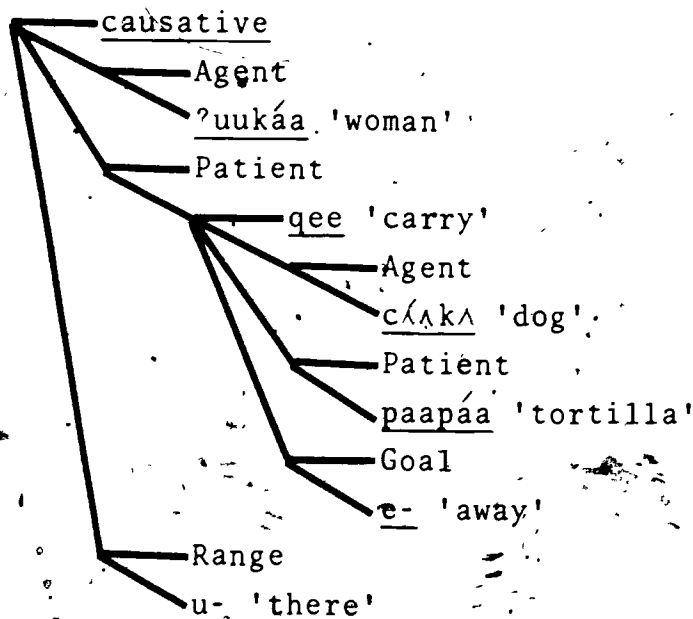
Under most circumstances these two propositions,
the one with causative as its predicate and the one with
qee as its predicate, are consolidated into a single
proposition. The resulting proposition does not represent

the semantic relationships of all its arguments directly;
but it is the basis for the surface or output form of the
expression that means 'the woman gave the dog a tortilla'.

In the derived proposition the predicate is the
semantically complex qéi-tʌa 'cause to carry, give'. The
new Agent is the Agent of the original causative. The
Patient is the Patient of the original base predicate qee.
The original causative (in Huichol, though not in the cor-
responding English) takes a Range element that tells where
the causative Agent performed her action--an internal loca-
tive. This element is carried through into the derived
proposition; but its surface form u- 'there' is incompatible
with the surface form of the Goal of the base proposition,
e- 'away'. As a result the original Goal is suppressed.[4]

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[4]E- can cooccur with u- within some words (Grimes
1964). If the sequence e-u- were used here, however, both
would be taken as the Range of causative only. The compound
locative e-u- conveys the idea of unspecified location, on
the order of 'she gives the dog tortillas wherever she hap-
pens to be' in contrast with u- by itself, which implies
that she was at a specific spot known to the hearer and gave
the dog a specific tortilla there. E-u- also contrasts with
e- by itself, which implies that she was out of sight of the
speaker and hearer when she gave the dog the tortilla. In
other words, the Range associated with causative preempts
the entire available surface apparatus of locative prefixes,
so that the Goal of qee is suppressed. If the Goal were
sufficiently important in the staging of the utterance, it
would be expressed by repeating the base proposition without
the causative: 'the woman gave the dog a tortilla; he car-
ried it away'.

The agent of the original base predicate is no longer
treated as an Agent after consolidation. In Huichol it
behaves in relation to surface forms exactly as though it
were a Benefactive instead. For example, in the presence
of a Patient, as in this example, it is expressed as the
grammatical direct object, while the Patient is expressed
as a syntactic complement that lacks the cross reference
that the direct object has to a verbal affix. The consoli-
dated proposition is now qéi-tʌa A P R B (ʔuukáa 'woman',
paapáa 'tortilla', u- 'there', cʌʌkʌ 'dog'). It is spoken
as ʔuukáa p-íi+-qéi-tʌa paapáa cʌʌkʌ (woman assertion-3
singular-object-carry-cause tortilla dog) 'the woman gave the
dog a tortilla'.[5] The tree representation of the proposi-

---

[5]This word order represents normal or unmarked
thematization (Chapter 21), with Agent as subject coming
first. The u- that represents the Range is suppressed in
this form due to a positional incompatibility with i-
'third singular object'. The u- can be recovered either
by moving the Benefactive to just before the verb, which
eliminates the third person singular object cross referent,
or by using a different person or number of Benefactive,
which removes the positional incompatibility of the prefixes.
In the first case the sentence is ʔuukáa cʌʌkʌ p-úu+-qéi-tʌa
paapáa 'the woman gave the dog a tortilla', and in the second
it is ʔuukáa pʌ-nécí+-ʔu-qéi-tʌa paapáa 'the woman gave me
a tortilla'.

---

tion (perhaps pseudo-proposition would be a better term)
that results from consolidation of causative and qee is

qéi-tʌa 'cause to carry, give'
Agent
ʔuukáa 'woman'
Patient
paapáa 'tortilla'
Range
u- 'there'
Benefactive
çʌ́ʌkʌ 'dog'
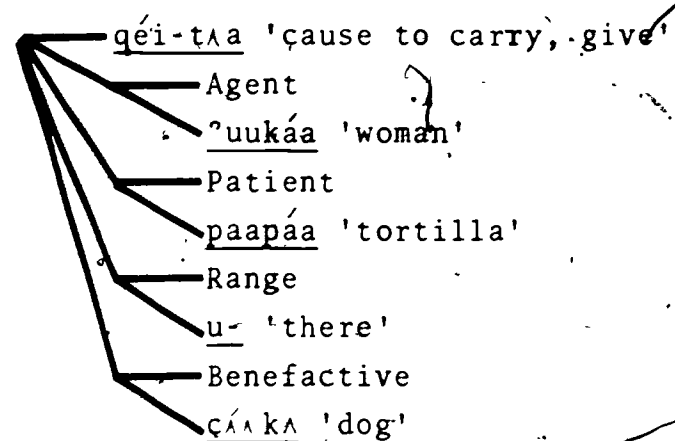
     The roles listed as Benefactive and Instrument appear
to be derivable from abstract predicates by consolidation
in the same way as the causative is derived. A likely
representation for the predicate that consolidates to give
the Benefactive role is something like benefactive A P G
where the Agent must be coreferential with the Agent of the
base proposition if it has an Agent, the Patient is the base
proposition itself, and the Goal is the element that after
consolidation occupies the Benefactive role. Instrument
appears to have similar form but with different conditions:
instrument A P G. The Agent must be coreferential with the
Agent of the base proposition. In this case the base pro-
position must have an Agent. The Patient of instrument,
however, is the implement used to carry out the action of
the base proposition, and the Goal is the base proposition
itself. We could paraphrase benefactive A P G and instrument
A P G loosely as 'A does P in such a way as to affect G
by it' and 'A uses P in order to accomplish G'.

     The general elusiveness of the Range role--the
problem of inner versus outer locatives--suggests that
setting elements may be capable of being consolidated to

give a resultant Range that is not normally part of the
semantics of the base predicate involved. Sleep appears.
to have a semantically optional Range role connected with
it that denotes the surface on which one sleeps: I slept in
a comfortable bed and my dog slept on the floor. In the
case of I slept in New Orleans, however, the relationships
of New Orleans to the rest is not quite like that of bed
to the rest: notice the difference in acceptability between
a comfortable bed was what I slept in and *New Orleans was
what I slept in. This suggests that even though the gram-
matical expression of New Orleans is like that of the normal
Range element associated with sleep in the thematically
unmarked form of the proposition, the thematic identifying
form (Chapter 21) prohibits New Orleans from being treated
grammatically like a Range element. Perhaps in New Orleans
is really a setting element meaning 'when I was in New
Orleans' which is consolidated with the base proposition
in the absence of marked thematization. Once consolidated,
it is treated in the transformational shaping process like
a Range element. If this is so, a good deal of the problem
of distinguishing Range (inner locative) from setting (outer
locative) can be pinpointed.

Some predicates, the ones I have labeled lexical,
have meanings that are explainable at least partly in terms
of a few semantic roles. A more precise way to say this is
in terms of constraints on arguments: a certain lexical
predicate customarily takes, say, three arguments, and one
of these is expected to be Agent, another Patient, and still
another Instrument.

Still greater precision is desirable in some
contexts. In the paragraphs immediately preceding these

I suggested that at the deepest level of semantics Instrument is not a semantic role of the same kind as Agent. In the light of that discussion, a more exact formulation would be to say that a certain lexical predicate customarily takes, say, two arguments, Agent and Patient; in addition it is customarily dominated by an instrumental abstract predicate. Except where some kind of prominence condition blocks ordinary consolidation, this statement implies results equivalent to those of the less formal statement. Since either is translatable into the other, and the occasions on which it is necessary to separate them will not concern us until Chapter 21, I will use whichever form of statement fits the context best.

Role constraints are not the only ones that can be placed on arguments. There are also coreferentiality constraints. For example, the causative predicate, as already mentioned, takes an Agent and a Patient. The Patient itself has as its argument a proposition that contains a lexical predicate, which I referred to earlier as the base predicate. If the base predicate has an Agent, that Agent may or may not refer to the same thing as the Agent of the causative itself. For the instrumental and benefactive abstract predicates, however, the Agent of the base predicate that they dominate must be the same as their own Agent.

Still further constraints are placed on the arguments of some predicates. The requirement that the Patient of a causative be a proposition that contains a lexical predicate is that kind of constraint. It may be a tighter constraint than just that the Patient be lexical; it may exclude (at least in some languages) lexical predicates

that have an Essive as one of their arguments. In other words,
causative derivations might be able to involve actions in
a way that could be translated 'he made her cry', or action-
processes like 'he had her write the letter', or processes
like 'he made the paint peel', or possibly even states like
'he caused it to be wide' without any implication that it
got that way after being some other way first; on the other
hand, causatives of nominals like 'he caused the balloon',
either in the sense that he caused the balloon to come into
existence or that he caused something to take the shape of
a balloon, might or might not be possible.[6] The best way

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[6]The punch line of one Huichol folk tale comes when
one dancer tells another dancer whose dancing the first one
thinks is crude, kenéu+tuizútλa 'go turn into a pig!', from
tuizu 'pig' and the causative -t·a. He did; and since he
was wearing a dark shirt with a white neckerchief, that
accounts for the collared peccary. Stems like this one,
built from a noun and a causative, may well represent a
causative-essive semantics that is not permitted in other
languages.

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to formulate this kind of constraint on arguments is not
yet clear. Weinreich's transfer features (1966a, b) may
be one way of expressing constraints; Hall (1969) used the
notion to talk about semantic roles in Subanon verbs.

3.   THE COMPLEXITY OF ARGUMENTS

        There seems to be no limit on how complex an
argument can be. Each argument is represented in the
semantic analysis by a subtree of the total tree.

The main requirement that applies to the information content
of an argument that belongs to a lexical predicate is this:
the hearer must be able to know what the referent of that.
argument is. In many cases the speaker assumes, either on
the grounds of what he has said already or on the grounds
of what is present in the situation of speaking, that the
hearer knows who or what he is talking about. In this
case the argument will be minimally complex, represented
by pronominal or zero identification. In other cases its
reference must be established, and the speaker must expand
the argument to the point where he feels sure the hearer
knows what he is talking about (Weizenbaum 1967).

Identification is not the only requirement of speech
that bears on the internal complexity of an argument. The
hearer may be able to distinguish the thing referred to
from everything else in the discourse; but the speaker also
has the option of adding to what the hearer knows about it.
Description and characterization are well known problems in
literary composition; they illustrate the fact that the
speaker, in addition to telling what happened, may want the
hearer to associate certain attitudes or visual images with
the things he distinguishes. The level of detail that is
managed here is completely under the speaker's control in
the sense that it does not depend merely on the hearer's
ability to distinguish one referent from another. The
speaker may go to any lengths he likes to build up detail,
color, and spice in what he says.

4.   CONSTRAINTS NOT RELATED TO ROLES

We have already looked at some of the constraints
a predicate imposes on its arguments in terms of semantic
roles. There are other constraints as well. A number of

predicates expect one of their arguments to refer to a group
rather than to a single individual. Collide in English has
one role set in which there is a Patient that must be a
group. In the two ships collided the action is bidirectional,
not directed from a particular ship to the other. The sense
is equivalent to that of a collision took place in which
two ships were involved. Pair is another predicate that
takes a group Patient, with the further requirement that
the group consist of neither more nor less than two indivi-
duals: Al and Mary are quite a pair, buy me a pair of socks.[7]

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[7]Even though the greatest variety of role patterns
is found on predicates in English that ultimately take the
surface form of verbs, those that tend to be given other
grammatical forms have role sets as well.

Langendoen (1970.113-115) discusses a kind of
requirement on reference that distinguishes between what the
speaker thinks to be so and what other people who are
mentioned in a discourse believe. He speaks of referential
transparency, in which the speaker's beliefs about the state
of the world hold not only for a particular predicate but
for its arguments as well, and referential opacity, where
the speaker does not have to square his beliefs about the
state of the world with those expressed in the arguments:
'referentially opaque contexts basically permit the intro-
duction of the beliefs of different persons: the speaker,
the person or persons who play roles in the sentence under
consideration, or people in general. Referentially trans-
parent contexts admit only those of the speaker (and also
perhaps of people in general).'

It is possible that the concept of embedded perfor-
matives may provide a means for incorporating constraints
of opacity into a formal grammar. For example, the Patient
of know must be referentially transparent; it must be so
(hence the Kiparskys' use (1971) of factive for this relation,
in the sense that we cannot know anything that is not a
fact). We can say I know it is snowing if it is snowing,
but we score zero if we are standing in the sun. The Patient
of know must be consonant with what the state of the world
is both from the point of view of the Experiencer of know
and from the point of view of the speaker. For the refer-
entially opaque believe, however, the Experiencer and the
speaker may see the world as different. John knew it was
Monday only if the speaker agrees with John that it was in
fact Monday; but if John believed it was Monday he and the
speaker might still have disagreed about the state of affairs.

For restrictions of another kind, there are cer-
tain implications that must hold among the arguments of
some predicates in order for them to be considered appro-
priate. Fillmore (1968) distinguishes a group of inten-
sional properties of predicates based on logical relations
among their arguments. Symmetric predicates like collide
and touch have as part of their meaning the fact that if
a touches b, it is also true that b touches a and vice
versa. Antisymmetric predicates include the opposite as
part of their meaning: if we say that a outgrew b, then it
cannot be true that b outgrew a. Many predicates are neither
symmetric nor antisymmetric; that type of implication is
simply irrelevant. Such predicates are called mesosymmetric,
and are exemplified by love, in the sense that to assert
that Bob loves Susan is no guarantee either that Susan
loves Bob or that Susan does not love Bob.

Another relation of the same kind among arguments
of a predicate is that of reflexivity, but not in the purely
grammatical sense that distinguishes Karen saw herself in
the mirror from Karen saw her (somebody other than Karen)
in the mirror. Predicates that are logically reflexive are
those for which the possibility of saying them with argu-
ments a and b implies the further possibility of saying
them with arguments a and a, which may then entail the sur-
face grammatical feature called the reflexive. This is the
case with equals. We can say this steak equals that roast
in weight, but we can also say (trivially but truly) this
steak equals itself in weight. There are also antireflexive
predicates for which it is not possible to use the same
argument in both positions:. *3 differs from itself in
number does not hold. Most predicates are mesoreflexive;
that is, the question of reflexivity does not enter into
their meaning. Bob loves Susan carries no implications at
all about whether Bob loves himself or not.

The third intensional relation among arguments
that Fillmore mentions is that of transitivity. Again, the
term is not used in the ordinary grammatical sense that
distinguishes those verbs that take direct objects from
those that do not. It is rather used in the logical sense
that if a is related to b and b to c by a transitive rela-
tion, then a is related to c by the same relation. Exceed
is transitive in this sense; if your entertainment bill
exceeds my salary and my salary exceeds the Federal'poverty
limit, then it is legitimate to assert that your entertain-
ment bill exceeds the Federal poverty limit.[8]   Other

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[8]Drawing the conclusion in that way clashes with
another kind of restriction on putting things in the same

sentence, namely that the result makes it sound as though
there were a Federal poverty limit on entertainment bills,
whereas the limit actually has to do with salaries.

predicates are antitransitive. Beget has as part of its
meaning in English that if Abraham begat Isaac and Isaac
begat Jacob, the two assertions together would make it
impossible to assert that *Abraham begat Jacob.[9] Other

[9]Apparently the verb in Classical Hebrew that is
translated as 'beget' in the Bible is not antitransitive. The
assumption that it is antitransitive in Hebrew as in English
seem to be behind Archbishop Ussher's celebrated chronology.

predicates are outside the transitivity scheme; love again is
mesotransitive in that Jason loves Sandra and Sandra loves
Xavier taken together shed only dim light on the possibility
of asserting that Jason loves Xavier.

CHAPTER TWELVE

REFERENTIAL INDICES

In talking about predicates and their arguments we
have considered some arguments to be monolithic blobs in
the sense that their internal structure does not interest
us at the moment. Others we have recognized as proposi-
tions whose internal form interests us. Even in the
second case, after treating the part we are interested in
(as for example, when we point out that one argument of
go in the sense of motion must be a proposition whose
predicate is the Agent role) we usually disregard the
rest. To suggest, however, that the argument of one pro-
position is another proposition, immediately raises the
question whether the chain of propositions within proposi-
tions ever comes to an end. We can easily imagine the
content of a large discourse to be represented by a large
tree composed of propositions; but it must not be an in-
finitely large tree.

The chain stops when the speaker assumes that the
hearer knows what he is talking about.

Compare first the way in which a situation is
verbalized when the speaker and hearer have shared many
experiences, in contrast with the way complete strangers
are able to verbalize the same situation. Husbands and
wives typically communicate much in a few words. To speak
to one's wife with the same depth of verbal explanation and
identification that would be appropriate for a stranger

would be either boring or insulting: Have a good day?
answered by Schultz called again might convey the same thing
that to a stranger would have to be spelled out--perhaps
as follows: Have a good day? answered by I left home and
went to work at the apple squeezing factory. Things were
going well, but in the middle of the afternoon our former
mountain climbing partner Ross N. Schultz, who lives in a
suburb of Akron, Ohio, called for the third time to tell
us that he was sure he had left twenty yards of braided
nylon rope in the trunk of our car, and that he would like
us either to hurry up and find it and mail it to him or else
pay him for it. Each time he calls he gets more disagree-
able about it, with the result that the rest of my day was
abnormally tense.

Consider also the Boy Scout leader who walks into
a camp dormitory at 11:30 at night, turns on the lights,
and sees pillows all over the floor and the glass of a
shattered light bulb, while every eyelid droops in simulated
sleep and a hush that is on the point of exploding into
twenty nervous giggles fills the room. He does not say,
Who scattered pillows all over the place and broke the light
bulb and is pretending now to be asleep? The only expression
that really fits the situation is All right, who did it?
The situation is already defined in sufficient detail to
all concerned that no further verbiage is required.

Communication has many aspects that are like those
parlor games in which one person, analogous to the hearer
in a speech situation, tries either to identify an object
or to pinpoint a situation on the basis of signals from the
other players, whose role is analogous to that of the speaker.
Suppose the game is one in which the players decide on a

certain object which the one who is 'it' has to guess. He
comes into the room, and they help him discriminate that
object from all others in the room by clapping their hands
faster as he gets closer to it and slower as he gets farther
away from it. As soon as his discrimination matches theirs,
the round is over.

        In the same way, as soon as the speaker feels that
the hearer's perception of the situation he is talking about
matches his own within the limits of acceptability that he
sets, he can stop his semantic development; he has reached
his objective. If we conceptualized situations in terms of
the kind of cognitive map suggested by Kurt Lewin (1936),
we would say that the speaker reaches a point where he is
willing to assume that the hearer's map of the situation
matches his own satisfactorily. This is true whether we
are talking about objects, situations, or abstractions that
involve whole systems of relationships. For example, there
are linguists to whom I can signal a whole set of ideas by
the single word phrase with a fair assurance that their set
of ideas will match mine well enough for us to get on.
There are other linguists in whose presence I am not so sure.
In conversing with linguists from the second group I tend
to bypass the shorthand label and go on to describe the part
of the system of ideas I am talking about in enough detail
that I can see they understand.

        Even monologuists, which includes writers, lecturers,
and not a few conversationalists who lose interest in moni-
toring how well the other person is following them, make
certain assumptions about how much they have to tell their
audience to get their point across. Each (barring pathology)
builds a semantic structure that he feels is appropriate to

his audience, and terminates its elaboration when he thinks
he is able to get through. He might be wrong.

The assumption on the part of the speaker that
what he is trying to say is known adequately to the hearer
for the speaker's purposes can now be embodied in linguis-
tics through the notion of the referential index. Chomsky
(1965.145) proposed the use of such indices to register
coreferentiality, the condition in which two parts of a
sentence refer to the same thing. Even in proposing it,
however, he recognized that it did not fit linguistic theory
gracefully. Other scholars have shown how it fails to fit,
though nothing better has come along to replace it.

The problem is that even the kind of grammar that
claims to account for nothing larger than sentences cannot
work right unless something akin to the referential index
is embodied in it. Specifically, the difference between
John saw him and John saw himself is tied up with the report
that whoever John may be in the speaker's and hearer's
systems of reference, the person who was seen in the first
instance was not that John, and in the second instance it
was.

Since referential indices are part of the system of
language, they should not be confused with indices of
perception. Nothing is gained by going around pinning
numbers on whatever speaker and hearer might each perceive
as different in the world around them. That is a problem
for psychologists, not for linguists. The referential indi-
ces of linguistics have to do only with those judgments
about sameness or difference of reference that have reper-
cussions in linguistic form.

For example, whenever in English we have a surface
grammatical configuration that involves a subject and an
object, we have to know whether the subject and object
refer to the same thing or not. If they do, the object is
in the reflexive form; if they do not, it is in the nonre-
flexive form. Huichol has a second kind of reflexive in
which for any surface grammatical configuration that involves
a possessed noun and its possessor, we have to know whether
the possessor is the same as the subject of the sentence.
If it is, there is a reflexive possessive that must be
used; if it is not, the regular possessive is used. The
English sentence John saw his house is ambiguous regarding
the identity of the owner of the house. It could be John's
own house or it could be someone else's house. In Huichol,
however, there can be no such ambiguity. wáani yuu-kíi
púu+-zéi 'John saw his (own) house' is kept carefully
distinct from wáani kíi-ya púu+-zéi 'John saw his (somebody
else's house'.

The idea of referential distinctness is not as clear
cut as the more obvious examples make it seem. Lakoff (ms)
has pointed out how in conjunctive sentences the replacement
of one part by do so involves conditions of identity of
reference similar to those involved in pronominalization.
Yet a large class of examples typified by Tarzan ate a
banana and so did Jane are not coreferential in the strict
sense; each person ate a different banana, and for that
matter each performed a different act of eating, probably
at a different time and place. But what each did was an
act of eating, and what each ate was a banana.

In other words, even though we cannot get along with-
out the concept of reference as part of linguistic theory,

neither are we able yet to articulate a theory of reference
that characterizes the subject adequately. Whatever we
come up with eventually, it will have to take into account
at least the following observations:

(1) Speakers at times tell hearers explicitly
that two or more of the things they are talking about are
to be taken as having the same reference. Reflexives are
one instance of this. Some equative sentences have a similar
effect, as when the detective announces, This man is the
one who killed Colonel Fortescue.

(2) Sameness of reference is relative, not absolute.
My great-grandfather built his own house and so will I are
similar enough in reference to permit use of the do so
construction, but refer to different houses, acts of building,
and times.

(3) The assumption on the part of the speaker
that the hearer has in mind a referential picture equivalent
to his own, or at least should have such a picture in mind
as a result of what he has said, is at the root of the
speaker's decision to elaborate his semantic development
no further. If we symbolize that semantic development by
a tree of propositions, the end of each branch of the tree
is either a predicate or a referential index.[1]

---

[1]To say that the hearer knows what the speaker is
talking about does not imply that all referential indices
are definite. The speaker and hearer can be tacitly agreed
on the indefiniteness of something as well as on the defin-
iteness of something else. If I ask, Are there any unicorns
grazing in front of your house now? and you answer No, we
have agreed on the identity of you and me, your house, and
the space around it, and also on the capacity of both of us

to recognize a unicorn should one appear. But neither of
us has committed himself to reference to any particular
unicorn, or even that there are such things.

All that has been said about reference so far applies
primarily to reference to individuals. Yet, as already
mentioned in Chapter 3.2, reference to individuals seems
to be fairly straightforward, even though we do not yet
know all the rules of the game. When we make reference to
groups, however, things are anything but straightforward.
We have groups in which no individuals stand out, as in the
Goths sacked Rome. There are groups defined by relation to
a single individual in them, yet treated as groups, as in
the court went to Windsor for the season. There are still
other groups in which the defining individual is separate
from the rest of the group in some instances and merged
with the group in others: The chairman reminded us that
we had a three o'clock deadline. So we all buckled down
and finished the plans. The second sentence includes the
chairman in the group; the first does not. Other groups
are weakly constituted; they consist of individuals for most
of the reference of the discourse, but the individuals are
sometimes put together under a cover label: The contenders
fell apart and retired to their corners. Other groups are
indeterminate, like the conventional they of they say this
summer will be hot, or the predefined they of some languages
in which they were fishing in the absence of any other
defining information means 'all the members of our tribe
were fishing'.

Two patterns of reference are peculiar to groups.
Reciprocal reference implies a group split into two parts,

say A and B. Whatever action is involved, reciprocal forms
tell the hearer that there are some members of A (possibly
all) directing the action at members of B, and at the same
time some members of B directing the same action at members
of A, as in the armies charged at each other. Respective
reference, on the other hand, matches the members of one
group to the members of another group ordinally. The
sentence Al and George took their girl friends to Disney-
land and Knott's Berry Farm respectively matches Al with his
girl friend and Disneyland and matches George with his girl
friend and Knott's Berry Farm.

The time indices mentioned in 3.2 and 20.5 are a
specialized kind of referential indices. Different points
in time may or may not be distinct within the particular
topology imposed on the time line by a discourse.

CHAPTER THIRTEEN

THE GRAMMAR OF SEMANTIC PRODUCTIONS

The kind of semantic development I have talked about in the preceding chapters can be represented by·a tree. The infinite family of trees that can serve to characterize semantic productions can be characterized much more simply than, say, the syntactic trees of Chomsky (1965 or even 1970). These characterizations are satisfactory for any scale of magnitude from sentence to discourse.

1. FORMATION

The semantic grammar of propositions takes as its starting point an initial symbol F for 'form', representing a proposition and one rewrite rule that replaces F by one or more predicates p together with zero or more arguments A. The asterisk stands for a string of any number of elements greater than or equal to the subscript beneath it. This is the Predicate Rule:

$$F \longrightarrow P_1^* \ A_0^*$$

The symbol A for the arguments is actually a dummy or intermediate symbol. It stands for either another form F to represent a·proposition acting as an argument, for a referential index that terminates the recursion, or for an indexed proposition. The Argument Rule has the form

$$A \longrightarrow (F_i)$$

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where the linked parentheses (Fillmore 1968.28) indicate
that either element may appear alone or both may appear
together, and i stands for any referential index. The
Argument Rule is thus a conflation of three rules, $A \rightarrow F$,
$A \rightarrow i$, and $A \rightarrow F\ i$, just as the Predicate Rule is a
conflation of a presumably limitless number of rules,
$F \rightarrow P$, $F \rightarrow P\ A$, $F \rightarrow P\ A\ A$, $F \rightarrow P\ P$, $F \rightarrow P\ P\ A$, ...

As a formal grammar this fits the standard defini-
tion $G = (N,\ T,\ S,\ P)$; that is, the grammar $\underline{G}$ is a 4-tuple
that consists of a set $\underline{N}$ of nonterminal symbols, a set $\underline{T}$
of terminal symbols that do not overlap with $\underline{N}$ (or in set
terms, $N \cap T = \emptyset$), a distinguished symbol $\underline{S}$ that is in $\underline{N}$,
and a set of productions $\underline{P}$ by which the distinguished or
starting symbol $\underline{S}$ is related to all possible strings of
terminal symbols.[1] In the formation of propositions the

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[1]See for example the first footnote of Griebach
1969, which is equivalent though phrased in a slightly dif-
ferent way.

_____

nonterminal symbols are $\underline{F}$ and $\underline{A}$, propositions and arguments.
The terminal symbols are $\underline{p}$, which stands for any predicate,
and $\underline{i}$, which stands for any referential index. $\underline{F}$ is
distinguished as the starting symbol. The productions $\underline{P}$
are defined by the Predicate Rule and the Argument Rule.

Practically speaking the strings of predicates and
referential indices that are the output of this grammar are
of little direct interest. We are more interested in the
phrase markers implied by the grammar; that is, in the tree
that represents the structure or derivational history of a
semantic production by telling what arguments are associated

with what predicates. This is a two-dimensional represen-
tation of the semantic relationships that are implied by
the grammar. Strictly speaking it is redundant because in
every case it can be recovered from the string that the
formal grammar implies; but for the most part we leave the
strings aside and talk instead about the corresponding
phrase markers.[2]

---

[2]Most linguists have an intuitive grasp of struc-
tural relations as presented in two dimensions, and object
to having to extract structural information from string
representations. Mathematicians who work with language and
language-like systems, on the other hand, tend to think in
terms of grammars and strings and to regard derivational
history as logical excess baggage. Linguists who are inter-
ested in bridging this gap may find the game of Queries 'n
Theories (Allen et al. 1970) useful.

This grammar of propositions is recursive in form;
one of its symbols, $\underline{F}$, appears both as a symbol to be re-
written in the Predicate Rule and as one of the symbols
that may be used to rewrite another symbol in the Argument
Rule. Because of this property there is no limit to the
size of trees that are implied by it, even if we were to
limit the number of arguments that could be associated with
any predicate in the Predicate Rule.[3]

---

[3]The predicates I characterized as lexical in
Chapter 8 normally take no more than five or six arguments:
climb A P G R B as in the questionable they climbed the
supplies across the cliff for me, with supernumerary P and
B, is about as complicated as things get. When we consider

the rhetorical predicates of Chapter 14, however, it will
become apparent that a relation like _and_ has absolutely no
limit on the number of arguments it can take.

Our use of pronominalization patterns suggests that
we treat entire subtrees composed of propositions as indexable
entities: They had to dive from the dock and swim
under the hull before the ship's propellors were stopped.
When I thought about it later I broke out in a sweat. The
_it_ of the second sentence refers to the entire complex of
events together with the background circumstance that the
ship's propellors were still turning. The referential index
is associated with that subtree as a whole rather than with
a single component of it. The Argument Rule employs linked
parentheses to indicate the option of indexing an entire
proposition as well as having the proposition or the index
by itself.[4]

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[4] Another possibility would be to index every proposition whether the indexing is made use of or not. This
would give the Argument Rule the form A $\longrightarrow$ (F) i.

Chapter 10.2 implies that each language has a stock
of predicates that are available to be fitted together
according to the Predicate Rule. Together they constitute
the semantic lexicon. Several possible predicates of
English have been mentioned, each with one or more sets of
constraints on what kinds of propositions they can take as
arguments: cause A P, hit (A|I) R, where the linked parentheses constitute a condensed notation for distinct sets
of arguments, bend ({(A|I) | C}) P F, and so forth. Each

role set is associated with particular areas of meaning of
the predicate. If the predicate is used with some role
set other than the ones registered in the lexicon as the
conventional ones, we can still predict that the noncon-
ventional role set will be recognized and reacted to as
strange or innovative. We can also predict that if it is
understood at all, it will be understood in terms of the
general meanings of the roles that are used.

Predicates have many other properties besides their
conventional cooccurrence with certain roles. Many predi-
cates can probably be decomposed into semantic components.
All have associative and other ties to other predicates as
was described in Chapter 10. All these other properties
could, however, be considered as conditions that govern
the appropriateness of selecting a particular predicate
for a particular situation. The grammar of propositions
that I have given puts certain limits on the ways in which
predicates can be linked to each other. Any assemblage of
propositions that is put together by the Predicate Rule
and the Argument Rule is capable of being processed into
speech; but the grammar lays down no further restrictions
on what can be put together. As far as the possibility of
predicates being assembled into propositions and communi-
cated is concerned, the grammar does not hinder us from
bringing together the prosaic with the outlandish, the
appropriate with the wildly inappropriate, truth with false-
hood, and sense with nonsense if we wish to. Whether we
construct utterances according to other canons of appro-
priateness is a matter of prudence, not grammar. There is
so much evidence that language is not used only to inquire,
to inform, or command, but also to befuddle, mislead, or
simply fill up time without saying anything, that a theory

of language that could not comprehend these uses as well
along with the more prosaic ones would be unrealistic.

Not only must a theory of grammar allow for viola-
tion of counsels of prudence and for failure to make sense;
it must leave room for verbal play. Consider the poets
who would have to go on welfare if they were required to
obey the dicta laid down by grammarians. The soul of a
good deal of poetry is in the bending of ordinary semantics
to just this side, or in some case just the other side, of
the bounds of conventional semantics. Sometimes what the
poet bends stays bent; when the Hebrew poet 'escaped by the
skin of his teeth' (Job 19:20) he set up a deformation in
the meaning of the word for 'skin' that has endured for
millenia.

The grammar of semantic productions implies phrase
markers, as already mentioned. The representation of trees
that is most generally familiar to linguists is the kind
used by Chomsky (1957) to depict phrase markers in his
syntax-centered grammar. Chomsky's trees have their roots
toward the top center of the page, or in the north. A
north-oriented tree representation of the phrase marker
that underlies the Huichol example of Chapter 11.2 would
look like this:[5]

---

[5]In this phrase marker and the equivalent ones to
follow I have not gone further into the semantic structure
of the words for 'woman', 'dog', or 'tortilla', or the
prefixes 'there' and 'away'. Each of these is ultimately
represented by a development of its own that terminates in
a referential index to indicate the speaker's judgment that
the hearer has established an equivalent reference. The

subtree corresponding to each of these forms develops along
lines such as those suggested by Langendoen (1969).
Triangles in this tree and capital letters in the ones that
follow indicate incomplete representation of derivations.

causative

Agent ʔuukáa   Patient   Range u-
      'woman'   'there'

              qee
              'carry'

Agent   cʌʌkʌ   Patient paapáa Goal e-
         'dog'   'tortilla'   'away'
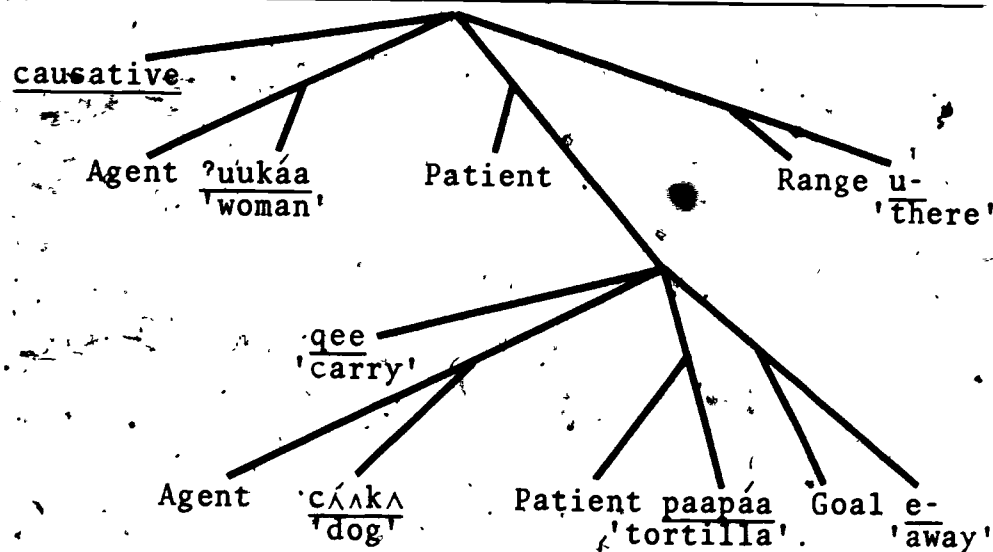
This representation is difficult to type or to set
in type, therefore also expensive. Even though it is the
one most linguists know, in this book I have shifted to the
fully equivalent form of phrase marker representation used
by Frantz (1970), in which the root is at the top left or
northwest. This is reasonably simple to type. A northwest-
oriented tree representation of the same phrase marker is
identical with the representation used in Chapter 11:

causative
Agent
ʔUUKÁA 'woman'
Patient

qee 'carry'
Agent
CÁʌKʌ 'dog'
Patient
PAAPÁA 'tortilla'
Goal
E- 'away'

Range
U- 'there'
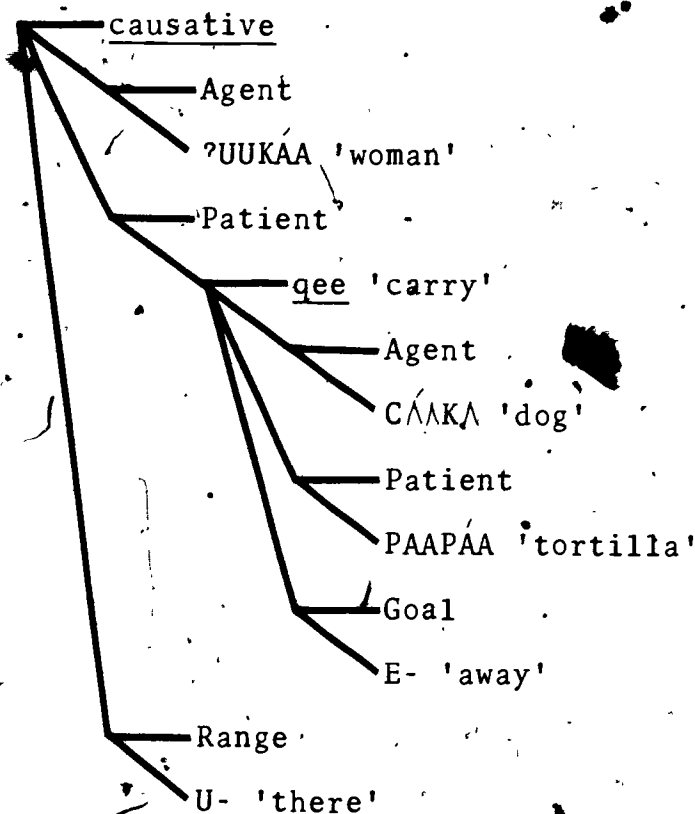
Linear representations of phrase markers are also
possible. They are ones that can be written out on a line
instead of in two dimensions, but that still give the
correct grouping of elements through parenthesization.   In
Chapter 11, for example, I introduced a notation that
distinguished the form of elements in the semantic lexicon
from the assignment of values to each variable in that form.
This assignment representation of a phrase marker represents
a proposition by its predicate, its role set, and an assign-
ment list that tells what argument corresponds to each role
in the role set. The assignment representation of the same
phrase marker was also given in Chapter 11:

causative A P R (ʔUUKÁA, qee A P G (CÁʌKʌ, PAAPÁA,
E-), U-)

A fully parenthesized representation of the same
phrase marker would simply move the elements out of the
assignment list of an assignment representation and group
each of them with its appropriate role symbol. A matching
pair of parentheses therefore corresponds to a level in the
north-oriented tree or a tabulator stop in the northwest-
oriented tree:

> causative (Agent ?UUKÁA) (Patient (qee
> (Agent CÁΛKΛ) (Patient PAAPÁA) (Goal E-))
> (Range U-)

The important thing to remember is that all four
of these representations of phrase markers are completely
equivalent. There is no information about either content
or organization in one that is not in each of the others.
Still other representations of the same information are
of course possible; one notes the south-oriented trees
used to depict evolutionary sequences (even though specific
genealogies are by tradition north-oriented). For linguis-
tics, however, the four forms I have listed are more than
enough.

2.   TRANSFORMATION

Obviously the phrase markers that are implied by
the formational grammar do not account directly for actual
speech forms. None of the illustrations given in the last
section suggests directly that what a Huichol says is
?uukáa píi+qéitΛ paapáa cΛΛkΛ 'the woman gave the dog a
tortilla'. Why; then, bother writing a grammar in this
way if it generates things that correspond to speech only
loosely?

The formational grammar of Section 1 is a grammar
that controls certain relationships and no others. It
deals with predicates and their arguments and relates them
in a tree structure. In doing this it aids us in noticing
certain patterns or generalizations that we recognize as
part of language. We see that things like the boy swept
the porch with a broom shares a good deal of its meaning
with the boy swept the porch, the broom swept the porch,
the sweeping of the porch, the sweeping of the broom, the
sweeping of the boy, the action of the broom, and other
expressions that differ from each other semantically, but
not much. Insofar as their meanings can be related, we
want a consistent way of making that relationship clear.
This we do by comparing their semantic underlying represen-
tations rather than by comparing their grammatical and phon-
ological surface representations. The surface representa-
tions, on the other hand, can be compared with each other
to show a different kind of relatedness--the relatedness
of Max kissed Susan with the last one to leave pays the bill,
or of leave the dishes and we'll go to the game with build
a better mousetrap and the world will beat a path to your
door, where it is hardly any kind of semantic relatedness
that is in focus.

The task of linguistics is not to prove either that
surface representations are all that there is to language
or that underlying representations are the whole story.
The best linguistics now gives us three kinds of informa-
tion about language: (1) what the surface representations
of utterances are like, (2) what the underlying represen-
tations of utterances are like, and (3) how the two match
each other. The relation, or transformation, is generally
taken today as a mapping from the set of possible underlying

representations onto the set of possible surface represen-
tations.[6]

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[6]The inverse mapping from surface representations
to underlying representations appears to be farther from
our reach at present. Sydney Lamb, for example, had hoped
that his stratificational model of grammar would provide
a decoding mode that used the same network of relationships
as was used to express the encoding or meaning-to-sound
mode (1966). The viable fragments of grammars that I have
seen written in that model, however, turn out to be uni-
directional. If, as is sometimes suggested, we understand
speech by producing our own analog of what we think the
other person is saying, the inverse mapping would not be
needed at all to account for that kind of linguistic behavior.
If on the other hand we also operate in a decoding mode at
times, then the inverse of a grammar is a problem that
merits a good deal of study.

In order for the transformational part of language
to operate it must presuppose not only the content structure
that the formational grammar exemplified in Section One of
this chapter provides; it must also take into account the
situation in which speech is taking place, everything that
has been said up to that point, and everything that the
speaker assumes that the hearer already knows. This cohe-
sion component, discussed in Chapter 19, influences the way
the content is organized for presentation.[7] Thematic or

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[7]Cohesion is not synonymous with Chomsky's perfor-
mance (1965). It appears to be capable of being presented
formally even though it is time dependent to a certain
extent.

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staging decisions, which include the speaker's decisions
about the way in which the things he says are to be brought
before the speaker (Chapter 21) and the relative prominence
he assigns to different parts of the content structure,
are a third major kind of input to the transformational
component. How the transformational component welds together
the results of the speaker's content, cohesion, and staging
decisions is only poorly understood, since most work in the
area of transformations has concentrated on cognitive
underlying structures and only tentatively reached out toward
the others.

        The transformational component could be thought of
as the means of sorting out the consequences of the speaker's
decisions for expression in speech. It channels information
into surface forms that are tightly constrained and there-
fore are appropriate vehicles of communication.

        As a result of the transformational process, speech
takes on a form that can be partitioned into constituents
that stand in conventionally recognized arrangements relative
to each other in time. The process of doing this sometimes
assigns the same surface form to more than one semantic
configuration. Ambiguity is the result; as far as we know,
all natural languages have some ambiguous surface forms.
The presence of ambiguity in language is by itself suffi-
cient reason for distinguishing underlying structure from
surface structure, in that underlying structure permits us
to specify the nature of ambiguities in a way that we could
not do by reference only to the ambiguous forms themselves.

        In addition, the transformational process often
results in a considerable amount of information being

communicated more than once. Consider, for example, the
redundancy of the subject and the verb ending in English
he drives a truck, where he and the -s ending.in drives
both communicate that the subject is singular and third
person. We do not want to assume that the choice that
gives rise to he and the choice that gives rise to -s are
really independent of each other. Copying transformations
of the kind commonly used to express agreement permit us
to recognize the multiple expressions of a single choice.

       Finally, transformation results in a definite
ordering in time of the expressions of all the surface
elements. This ordering is not a necessary characteristic
of the underlying semantics; but rather an accomodation to
the time dependent way in which the vocal tract operates
(Chafe 1967).

       All that I have said about the transformational
process in this section is programmatic and unsupported
here by examples. Nevertheless, a transformational grammar
is a compelling consequence of the decision to shape linguis-
tic theory by distinguishing fundamentally between choice
and implementation. There are plenty of examples in the
current linguistic literature of transformations that re-
late underlying structure with surface structure if we are
willing to confine ourselves to single sentences. In my
own work I have not yet tackled the problem of writing down
the explicit relationships between deep and surface forms
when more than sentences are involved; occupied with the
underlying structures themselves, I have simply assumed
that this can be done as an extension of sentence-based
transformation theory. Frantz's work on Blackfoot (1970)
includes explicit transformations that operate on an

underlying structure whose form agrees with the phrase
markers that I generate by the Predicate Rule and the
Argument Rule of Section One. Quillian's semantic memory
model (1968) has a rudimentary transformational component
that puts out information into more than one sentence
when the quantity of information in a semantic network is
too much for the available surface structure to convey.
Although this has the intriguing consequence of making the
sentence a performance notion, rather than the basic unit
of linguistic competence as Chomsky assumed in making that
questionable distinction in the first place (1965), it
indicates the direction that transformational studies can
most profitably take.

3. SPECIAL MAPPINGS

The formational grammar of semantic productions
given in Section One is exceedingly simple, maybe even too
simple. Yet it allows the relationships that seem to be
important in discourse to be expressed.

Additional complexity enters the picture in two
distinct ways. The first is in the nature of the
elements I have called predicates. Undoubtedly they
should not be taken as simple terminal symbols as I
have taken them here--ultimate elements in a theory of
semantics. They probably do have some kind of internal
structure of their own that is not accounted for satisfactorily
by providing them with associative and other relationships
to other predicates. For the present, however, I leave

the composition of predicates to one side. It does not
appear to affect our understanding of the structure of
discourse, though it is important for our total understanding
of language.

A further clarification is needed to head off
possible false impressions. The formational grammar of
propositions given in Section One is clear cut and definite.
It purports to model the organization of meaning in language
at a deep or primitive level. As a model its depth is only
relative, and there may well be a structure that we do not
yet see standing behind that structure. All that the
formational grammar claims is that the representation of
underlying structure it provides is adequate for saying
what I want to say about discourse. Even there, as should
be clear from Chapter Nine, phenomena like the Instrumental
and Benefactive roles can be formulated in distinct ways,
each of which fits the formational grammar, but one of which
possibly represents the result of the application of a
consolidation transformation and hence is not as far removed
from the surface form itself as the other formulation is.
Deep structure, then, is relative to what we are trying to
express by it.

The nature of the transformational component as I
see it differs somewhat from the way Chomsky presented
it. The kinds of constraints I will list are appropriate
to a Chomsky grammar; if they were applied to it they
could result in an artifact more appropriate to the subject
matter.

The principal constraint has to do with the way in
which transformations are ordered. Possibly because of the

fact that grammars are written on paper, it seems to have
become customary to think of the ordering of transformations
(and of phrase structure rules for that matter) as fixed in
a strict order. The ordering is, however, a partial order-
ing rather than a strict ordering. In other words, a
particular transformation does not necessarily have one and
only one other transformation as its predecessor. Instead
it has as its predecessors all rules, whether formational
or transformational, that provide an output that is recognized
by its structure index.[8] It has as its successors all rules

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[8]For the technical concepts of transformational
grammar the reader is referred to standard works: Bach
1964, Hale 1965, Chomsky 19 .

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whose structure indexes recognize the trees that it puts
out. While this principle of partial rather than strict
ordering has actually been implicit in all formal definitions
of rule systems, it seems to have been lost sight of in
practice.

The most notable point at which the ordering of
transformational rules has been done without reference to
the connectivity relations[9] that are implicit in the rules

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[9]Connectivity relations are those that are derived
in the case of transformational grammar from predecessor-
successor or tree producing-tree recognizing relations between
pairs of rules. Their use in the analysis of affix systems,
which also involve partial ordering, is discussed in
Grimes 1967, which can be applied to rules with almost no
change. See. B. Kroeker 1972.

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themselves is in the distinction between a grammatical
transformational component of grammar and a phonological
component. I take this to be a piece of crypto-Bloomfieldian

linguistics, in that there is no necessary discontinuity
between grammar and phonology in a transformational grammar.
Some rules recognize or introduce nonphonological features;
others phonological features, others both. Possibly the
sharp difference between sound and grammar has been infor-
mally carried over into formal grammar because it is useful
and reflects something fundamental about language. What
the detailed analysis of partial orderings in rule systems
is likely to show us is the interpenetration of grammar and
phonology; but the line between them has to be looked for
elsewhere.[10]

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[10]It is sometimes pointed out that phonological
rules have the form of context sensitive rewrite rules
that operate on strings, while transformations operate on
trees. Since, however, any string can be mapped onto a
tree in which each element of the string corresponds to a
daughter node and all daughter nodes go to one parent node,
there is no particular justification for using context
sensitive rules for phonology to the exclusion of trans-
formations. Furthermore, Chomsky and Halle (1968) use
context sensitive rules whose context part contains a good
deal of structural information in the form of labelled
brackets, implying structures or trees considerably more
complex than those that correspond to simple strings.

What I expect to see by the time we have looked
closely at complete transformational systems that include
phonology is that some phonological rules (rules that either
recognize or add or change phonological information, regard-
less of what else there may be in the rule) presuppose
nothing about the output of any of the nonphonological
transformations. Some of the rules that impose meter or

assonance, for example, might even recognize the output of
the formational grammar directly. Naturally a great many
rules that deal with phonology are ordered late; but the
point is that this ordering should express a fact about
language rather than an arbitrary partitioning of the
conceptual apparatus used to talk about language. It seems
reasonable, furthermore, to treat the part of the grammar
that provides explicit phonological underlying forms as a
set of transformations with highly specific structure in-
dices that usually involve particular semantic predicates.
Chafe (1968) has shown that rules of this kind, which we
could call symbolization rules, have to come after the part
of the grammar that adjusts idioms. ·Most of the phonolo-
gical rules in the usual sense follow the symbolization
rules.

In the entire transformational system there are
widely varying degrees of generality with which rules apply.
The least general rules tend to be the ones that express
irregularities. The most general ones express what we call
regularities, but there is no clear dividing line between
the two. Lakoff (1965) and others have discussed irregular-
ity and specific irregularities in considerable detail.
Certain kinds of irregularities are of special interest in
the framework of propositional grammar.

Transformations match underlying semantic configur-
ations with utterances. For each kind of predicate in a
semantic representation, the roles that are associated with
it match surface phenomena in specific ways.

Some role elements are obligatorily represented in
the corresponding surface forms. Others may be deleted

under some conditions even though there is evidence that
they are present in the underlying semantics. A deleted
role element, however, is not the same as a role element
that is not there in the first place.

Some role elements are always represented in the
surface form. In Huichol, for example, any predicate that
takes an Agent normally has that Agent represented in the
surface form by something--at the very least, by a subject
pronoun prefix. If in the process of consolidation with a
causative (11.2) an underlying Agent is shifted into a
different role such as Benefactive, then the representation
rules for Benefactive apply to it instead. (Such shifting
of roles is done only when something else is being brought
in as Agent.) The original is still represented in the
surface form, though not in the way most Agents are repre-
sented.

As has already been pointed out, role elements may
be deleted if they are redundant in terms of the previous
context, or obvious from the situation of speaking, or
conventional in terms of standard cultural expectations.
A question about the missing role element will often elicit
an answer that contains a certain amount of pique; the person
who asked it should have known better. He should have been
able to decipher it by rules of anaphora, or should have
seen what the speaker was pointing at, or should have known
what everybody knows who is in that situation.

In other cases the speaker does not know or does
not wish to tell what a particular role element is. In
this case a question about the missing role element elicits
a definite answer. The answer may be of the 'I don't know'

variety, or it may give out information grudgingly that was supposed to be kept a secret. In English the passive allows the Agent to be dropped in cases where filling it in might prove embarrassing: A: The folder was left on the desk, apparently. B: Who left it there? A: Well, if you really must know, I did.

Where a role is not a part of the semantics at all, rather than being deleted under the usual conditions, the reaction to a question about it is uniformly one of puzzlement: A: I ran a mile and a half this morning. B: What did you run a mile and a half this morning? A: Huh? In this example B has taken the sense of run that includes a machine as Patient, as in we ran the boat across the lake, while A began with the sense of run as a physical activity that includes no Patient. The lack of communication highlights the inappropriateness of a Patient in the only sense that A has in mind. In other words, there is nothing in A's semantics that could be construed as a Patient, so that there is no deletion to be recovered under any circumstances.

Analysis of data in terms of role systems involves keeping three things clearly separated: (1) underlying representations, (2) surface representations, and (3) the mappings between them. Practical difficulty always seems to result from trying to combine any two of the three.

An example of the necessity for keeping mappings themselves distinct from both underlying and surface forms is found in the referent assignment rules for Mamanwa of the Philippines. Jeanne Miller (ms) describes Mamanwa clauses in terms of the usual verb adjuncts of Philippine languages: subject, object, referent, and accessory. In

terms of the semantics of verbs, however, each adjunct
type is systematically related to several different under-
lying cases.

For example, the referent is assigned as follows.
There are direction predicates that take an Agent together
with either a Goal, a Range, or a Source, depending upon
the meaning of the verb. Agent matches subject; Goal,
Range, or Source match referent. The sentence ambalik hao
dini meaning 'I will return here' has the Goal as referent;
ampanik hao ka nizeg 'I will climb the coconut tree' has
Range as referent; ampanaw di hao 'I will leave here' has
Source as referent.

Action process predicates take Agent matched with
subject, Patient matched with object, Range matched with
referent, and Instrument matched with accessory. No action
process predicate takes all four adjuncts. ankang hao
ka lagkaw 'I will watch the child' has 'child' as Range and
referent; ibalabag o ining kaban dizan kining pirtahan
'will bar the door with this chest' has 'chest' as Range
and referent. (Patient with an action process predicate
is changed or acted upon directly; Range is not. 'I will
build a house' and 'I will cut down a banana tree' contain
Patient as object, not Range.)

Conveyance predicates have an Agent-Source matched
with subject, Patient matched with accessory, and Goal
matched with referent: ambaligza hao ka makaen kan Mariya
'I will sell the food to Mary' has 'Mary' as referent.
Many conveyance predicates have directional counterparts
with a different role set; they often include in their meaning
that the Agent moves along with the Patient, while with other

conveyance predicates such as 'sell' the Patient may sep-
arate from the Agent as a result of the action. ioli nao
ining baskit doro kan Robirto 'I will return this basket
to Roberto' has 'Roberto' as Goal and referent, and implies
that the Agent and the Patient do not separate. It differs
in its role set from the directional 'I will return here'.

    Acquisition predicates have an Agent-Goal matched
with subject, Patient matched with object, and Source
matched with referent: paliten o ya bozag doro kan Noay
'I will buy potatoes from Noay' has 'Noay' as Source,
expressed by referent. Here the Patient is not changed by
the action. Instead, treating something as Patient with
an acquisition predicate frequently implies that it is being
acquired as a whole, whereas treating the same thing as
Source implies an area or field out of which the Patient is
acquired: hinangen o ya banig with ya banig 'mat' as object
means 'I will make the mat', implying all of it; hinangan
o ya banig with ya banig as referent (shown by the verbal
inflection) means 'I will make part of the mat'. This whole-
part relationship expressed by Patient as over against
Source or Range is much more clear cut in other languages
of the Philippines than in Mamanwa.

    Experiencer predicates appear to have idiosyncratic
mappings to surface structure. Experiencer matches subject;
but Noninstigative Cause matches object, referent, or ac-
cessory depending upon the particular predicate. In masakiten
si Ilina ka biribiri "Beriberi is making Ilena sick', the
Noninstigative Cause 'beriberi' (a deficiency disease) is
object; but in nabalikan nami ya bilanat 'we have fever
again' the Noninstigative Cause 'fever' is referent.

In these ways the semantic roles of Mamanwa are
combined with different predicates, and the results fall
into eight definable clause patterns. The key to Mamanwa
grammar is the ability to keep track of the different ways
in which roles match surface categories.

In English the ways in which this matching is
accomplished seem to depend more on what individual roles
are present and being expressed than they do on the complete
complex of roles that is there and the meaning of the
predicates themselves, as is the case in Mamanwa. I have
already mentioned the general rule for subject assignment.
As Chafe formulates it (1970b.244), if there is an Agent
or Experiencer, it is subject as in I saw the President;
if not, the Benefactive (or possibly the Goal) is subject
as in I was given the best seat; if none of those are pre-
sent, the Patient is subject as in I was tired. The choice
of a passive form of expression removes Agent and Exper-
iencer from the running for this rule, with the result that
Benefactive or Patient match the subject even in the pre-
sence of an Agent or Experiencer as in I was given the best
seat by the manager. Several refinements on the rule as
Chafe gives it come to mind: Instrument is probably ranked
before Benefactive, and certainly before Patient in the
running for subject, as in this key will open every door
for you; Range is ranked after Patient as in sword clanged
against shield; and in the absence of any viable candidate
for subject, a dummy subject is inserted, as in it seems to
be snowing.

I suspect that there are actually two factors in-
volved in English subject assignment, but the details have
yet to be fitted into place. The first factor is a ranking

of roles in terms of priorities for subject assignment.
This ranking, however, is probably a partial ordering that
allows two or more roles to tie for subject position. The
second factor breaks the tie; it is related to the thematic
properties by which the relationship among the roles is
staged for the hearer's benefit. In <u>this necktie (P) was
given me (G) by my wife (AS)</u> vs. <u>I (G) was given this necktie
(P) by my wife (AS)</u>, I suspect that neither Patient nor
Goal outranks the other in the general plan of subject
assignment, but rather that the choice is made on grounds
of staging: in one case the speaker is talking about the
necktie, and in the other about what happened to him.

Both Mamanwa and English illustrate an important
point about deep-to-surface mappings: they are not simple.
One could think of the mapping relation as having a job
like that of the traffic officer in the parking lot at a
championship football game. There are only so many places
that can be filled; yet cars of all sizes and shapes and
degrees of maneuverability come in from all directions and
have to be accomodated somehow. The surface patterns of
language likewise provide a limited number of places for
information that comes in a wide variety. The process of
accomodating each kind of information into surface construc-
tions thus requires routings as complex as the gyrations
of the man in the blue coat as he tries to get all the cars
to pack in without jamming or wrinkling fenders.

As if that were not enough, individual predicates
may have special properties that require them to be
matched to surface structure in a particular way. Certain
ones may also be prohibited from going into surface structure
in the same way that most of the predicates that share their

other properties are permitted to fit. The English predi-
cate that underlies the word seem, for example, must under-
go the process known as extraposition (Jacobs and Rosenbaum
1968.171-178) before it can appear in a surface form. The
semantically similar form is likely, on the other hand, may
or may not undergo extraposition, depending probably on
thematic choices. Thus we have the extraposed forms it
seems that he came and it is likely that he came, but only
that he came is likely as the non-extraposed counterpart.

CHAPTER FOURTEEN

RHETORICAL STRUCTURE

In Chapters 8 through 13 we considered the part of language within which a small number of semantic roles play an important part. Role-related underlying structure, or lexical structure, however, accounts for only part of language. Now we turn to the remaining propositions that are represented in underlying structure--in other words, to those propositions whose predicates do not involve specifications on roles that must be present in their arguments.

Propositions whose arguments are not related to their predicates via semantic roles are called rhetorical propositions. The predicates in them are called rhetorical predicates. Their main function could be thought of as that of organizing the content of discourse. They join lexical propositions together, and they join other rhetorical propositions together. In a tree that represents the underlying structure of a discourse (Chapter 13), most of the propositions near the root are likely to be rhetorical, while most of the propositions near the leaves are likely to be lexical. Nevertheless, some rhetorical propositions may be dominated by lexical propositions: we just realized that either we will have to leave home before six or they will have to postpone the meeting, for example, contains a lexical predicate realize that dominates the alternative predicate symbolized by either ... or. In general, however, the tendency is for lexical predicates to be found in the more finely partitioned, terminal part

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of a derivation, and the rhetorical predicates in the upper
reaches.[1] The relationship exemplified in <u>although we were</u>

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[1]Strictly speaking, the role predicates are them-
selves rhetorical, since they embody no constraints on the
role composition of their arguments. They can still be
cut out as a separate class, however, by the fact that they
are always dominated by lexical predicates, whereas rhe-
torical predicates in the ordinary sense are not so restricted.

<u>nearly out of milk</u>, <u>the children didn't complain</u>, in which
<u>although</u> relates the two clauses as adversatives, is more
typical of the standard arrangement in which rhetorical
propositions dominate lexical ones.

Fuller's <u>The inductive method of Bible study</u> (1959)
was the first attempt to come to my knowledge in which
interestingly large sections of text were grouped according
to a small number of explicit organizing relations. The
well established tradition of <u>outlining</u> gives similar
groupings of elements within a text; but rarely is the out-
liner moved to be explicit about the kinds of coordination
and subordination upon which his outline is based. Fuller's
analysis of a text, however, gives groupings that are equi-
valent to an outline, then goes on to include the semantic
basis for each grouping.

Fuller's relationships between propositions corres-
pond rather closely to the ones I list later in this chapter,
though there are cases where some of his relationships can
be combined on the grounds that the differences between
them are attributable to differences in their arguments or
to staging differences. He distinguishes two kinds, logically

parallel to the grammatical notions of coordinate and sub-
ordinate. Logical relationships that involve 'equality of
class' include series, progression, and alternatives.
Those that involve 'equality by support' include negative-
positive, general-specific, fact-interpretation, way-end,
and comparison. They are in the category of restatements.
There are other supporting relationships as well that
involve assertions distinct from the ones they support
rather than being restatements: ground, inference, cause-
effect, fact-illustration, means-end, and setting-happening.
Still other supporting relationships may contain contrary
elements: adversative, question-answer, and situation-
response.

A group headed up by John Beekman have been
exchanging papers on Bible translation that take Fuller's
work together with Fillmore's case grammar as their common
point of departure. These include propositional analyses
of entire books of the Bible. The results of their work
are to be published in a book by Beekman that should be an
important contribution to discourse theory.

Longacre has investigated abstract relationships
that have domains beyond the sentence (Ballard, Conrad,
and Longacre 1971). His list of what I am calling rhetorical
relationships is similar to Fuller's. He makes the interest-
ing point that the minimal expression of most of these
relationships is normally the sentence, whereas the minimal
expression of the relationships that enter into lexical
propositions is normally the clause. Even though it is
possible to find rhetorical relations embedded deeply within
clauses (let's have no more of your neither-here-nor-there
observations) and to find role relationships spread out over

several sentences (The stone fell. It hit the ground.
Zog had made it happen. He used a tree trunk.), this kind
of observation is important in that it establishes regular-
ities of mapping between underlying and surface structure,
and thereby makes it possible to look for conditions (pos-
sibly related to staging in the first example and to rate
of information transmission in the second) under which the
ordinary mappings are overridden.

1. PARATACTIC PREDICATES

Rhetorical predicates divide into three kinds:
paratactic, hypotactic, and neutral. Paratactic predicates
have at least two arguments, each of which has equal weight.
Hypotactic predicates, on the other hand, have one or more
arguments, but are themselves attached as subordinate
to some proposition higher in the tree. In this way they
form the basis for subordinating forms of surface structure
at all levels. Neutral predicates may take either form;
they may coordinate a number of equal arguments, or they
may make their arguments be subordinate to something else.

There appear to be only two purely paratactic
predicates; all the other candidates for the class turn out
on examination to be neutral. Alternative, however, seems
to be truly paratactic. It offers a choice of this, or this,
or this, in the sense that as soon as one is chosen, no
further choices are possible. At the circus Johnny's mother
tells him, "Johnny, you may have a hot dog, or a hamburger,
or a candy apple. Or you may have some cotton candy." If
she puts it that way, the rules of the game are that once
Johnny has picked something, the rest of the game is off.
In this way the alternative predicate is like the logician's

exclusive OR.   Its arguments do not seem to be ordered
intrinsically, as are the arguments of the OR connective in
the Lisp programming language (McCarthy et al. 1962).

Response involves two semantic subtrees in an expli-
cit order such that the content of the second is largely
taken from the first, but new material is present as well.
The most obvious response arguments would be a question!
and its answer. The question normally contains a good deal
of information about the situation that is being talked,
about, and a successful reply can be made only by accepting
the information that is given in the question. Where were
you last night? I was over at Charlie's. begins with the
questioner stating the equivalent of you were somewhere last
night within the framework of his question. The answerer
accepts that; if he does not, then he has to disagree speci-
fically with it--what do you mean, where was I? I wasn't
anywhere. (The latter answer is not too good as epistemology,
but fine as ethnography, since it is equivalent to I was at
home, and goes back to the observation that the question would
probably never have been asked unless the questioner had
reason to believe that the answerer was not in his usual place.)

Remark and reply illustrate the response pattern
without the interrogative element in the first part. The
reply to a remark has to be a reply to that remark, not to
some other, if the speech is normal. On the other hand, the
logical relationship between the remark and the reply does
not have to be spelled out directly. A: We have a couple
of crocuses in bloom. B: I'd better take a look at my
casting rod. is a normal remark and reply in which the con-
necting link, crocuses imply spring and spring implies
fishing, is left unsaid. This indirect linkage is much more

common in replies to remarks than it is in answers to questions, although it also takes place there. <u>A:</u> <u>Where were you last night?</u> <u>B:</u> <u>I haven't had a drink for a month.</u> starts out with the explicit <u>you were somewhere last night;</u> <u>tell me where it was.</u> The answer, however, is not an answer so much as it is a reply to a remark like <u>I think you were at some bar</u> which is never actually said.

Both the plots of fairy tales and the writings of scientists are built on a response pattern. The first part gives a problem and the second its solution. The solution has to be a solution to the problem that was stated, not some other; and the problem is stated only to be solved. If the prince rescues some other maiden than the one that was originally abducted by the giant, he hasn't played the game. If the problem to be solved is one in plant breeding, the solution had better be a plant breeding solution, not a sociological one, even though some of the happiest moments of science come in fact from payoffs in the wrong area. Again, however, the content of the second part is dependent upon the content of the first part to a great extent. How to express this interlocking seems to be beyond us, especially if we try to express it as conditions on the arguments of the response predicate; but that is the shape of the relation.

I had originally regarded <u>sequence</u> as a paratactic predicate (ms). Since the development of Litteral's time index, however (ms),   I find that sequence is best regarded as the neutral predicate <u>collection</u> with nonoverlapping time indexing of the arguments. Sequence is discussed further in Section Three of this chapter.

2.   HYPOTACTIC PREDICATES

Hypotactic predicates relate their arguments to the
proposition that dominates them rather than primarily rela-
ting their arguments among themselves. The hypotactic
proposition is added as an.extra argument to some other
proposition, so that the hypotactic proposition as a whole
is subordinate to the rest of the dominating proposition.[2]

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[2]This characterization of hypotactic predicates
differs from the one I gave in 'Outlines and overlays',
in which the dominating proposition was tagged (by another
rhetorical predicate) as central and the subordinate parts
were peripheral. The representation of texts that this
strategy gave me failed to show subordinating relationships
in a way that could be capitalized on for describing mappings
to surface structure. The current formulation, which was
suggested by Bonnie Meyer (personal communication), is more
compatible with the traditional notion of coordination and
subordination.

Although I am not satisfied with the basis of clas-
sification, there does seem to be some point in dividing
hypotactic predicates into supplementary or supporting
predicates that add detail or explain or substantiate some-
thing, setting predicates that locate things in space and
time, and identification predicates that establish and main-
tain reference. These three kinds are similar to the dis-
tinction made in Chapter Four between background, setting,
and identification information in discourse in general.
As a subdivision of hypotactic predicates themselves this
three-way distinction is not ideal. In the first place, it

does not match the kinds of information that were discussed
in the earlier chapters exactly in that it leaves out
collateral information. In the second place, it applies in
the same loose fashion to paratactic and neutral predicates.
What I think we have is two partly independent ways of
classifying rhetorical predicates. By the form they give
to a derivational tree they are paratactic, hypotactic, and
neutral. By what they are used for in discourse they
divide into predicates that relate the different kinds of
information communicated in discourse with each other.

So, within the framework of this inadequately loose
classification, the following seven predicates could be
called supporting: Attributive adds qualities or color to
another predicate. It is used most appropriately when those
qualities are needed to show consistency later on. Thus
Dickens launches into his characterization of Scrooge with
Oh! but he was a tight-fisted hand at the grindstone,
Scrooge!--a squeezing, wrenching, grasping, scraping, clutch-
ing, covetous old sinner! Hard and sharp as flint, from
which no steel had ever struck out generous fire; secret,
and self-contained, and solitary as an oyster. All this
adds to the characterization that is also built up by the
narration of some of Scrooge's actions, and adds to the
magnitude of the obstacle that is overcome in Scrooge's
later transformation.

Equivalent, rather than adding information, simply
restates it, as in we planned to leave on May 1, the day
of the spring celebrations. The subordinated information
may present a different side of the thing referred to than
the thing it is subordinated to. In reference, however,
the two are the same. In the attributive predicate, in

contrast, the reference is determined by the dominating
member and imposed on the attributive; <u>Scrooge</u> is the one
who has been identified, and <u>solitary</u> as an-oyster is
linked to <u>Scrooge</u>, but not the other way around. In the
equivalent relation, however, either member could be used
to establish the reference; which one is dominant and which
subordinate seems to depend entirely on the staging or
perspective the hearer wishes to impose on what he says.
If it is the calendar date that is important, <u>May 1</u>
dominates; if it is the social significance of the day, then
<u>we planned to leave on the day of the spring celebration</u>,
<u>May 1</u> sets it up. Attribution does not permit this freedom
of staging: *<u>Oh! but he was Scrooge, a tight-fisted hand</u>
<u>at the grindstone!</u> won't work for me.

        <u>Specific</u> relates subordinate information that is
semantically less inclusive to dominant information that
is more inclusive and therefore less precise. <u>I heard a</u>
<u>flock of birds flying south--geese</u> goes from the more
inclusive <u>birds</u> to the more specific <u>geese</u>. Not only does
the relation of specificity apply between lexical items
like <u>birds</u> and <u>geese</u>, however; it also applies between very
large semantic subtrees: <u>Uncle George told me a story</u>
<u>about a little girl and three bears. It seems that there</u>
<u>was this little girl named Goldilocks who lived in a house</u>
<u>on the edge of the forest. One day ...</u> gives the story in
very general terms, then links a retelling in specific
terms to it. Connectives like <u>namely</u> and <u>that is</u> often
introduce a subordinate subtree that is related to its
dominating proposition as specific to general.

        Christensen (1963) points out that there are several
variations on the general-specific theme. One is abstract

to concrete; something concrete is given as a specific
instance of an abstract statement: He was not a very
ceremonious beau; he never sent her flowers or whispered
silly things in her ear, and not infrequently, at the very
last moment, when they had planned an evening at the theater
or the opera, he would call up to say that he couldn't get
away from the office.[3] Another form is literal to meta-

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[3]Louis Auchincloss, 'Maud', in The injustice
collectors, New York: New American Library, 1949.

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phorical, in which the metaphorical statement stands as
specific counterpart to the literal one: She came into
the room hopping mad, all guns blazing. A third variation
is denotative-connotative, by which I gather Christensen
means that the more general statement is prosaic, with little
load of evaluation, while the specific one is heavy on
personal evaluation: The former tenants had painted the
wall red, the most garish crimson you can imagine.

In explanation the subordinate element is different
in kind from the element that dominates it. It may be
abstract, relating the dominant element to some broader
context, as in your perpetual motion machine won't work
because of the law of the conservation of energy. Abstrac-
tions used as explanations generally go back to premises
that are widely accepted in the society of which speaker
and hearer are a part. It may be that these premises find
their natural expression almost exclusively in the explana-
tion relationship; that is when they are needed. They may
take the character of maxims: "I don't want my wife to take
skydiving lessons because you can't teach an old dog new
tricks. And as in the last example, the logical connection

between the explanation and the thing explained may have a
number of steps left out. Explanation in the main uses
enthymemes, not proofs:

The subordinate element in an explanation may on
the other hand be concrete, as when a background narrative
sequence is told to explain something: your perpetual
motion machine won't work because you forgot to oil the
bearings. When an explanation consists of background events,
the implication is that there is a cause-effect relation-
ship between the background sequence and the dominating node.

Evidence has a subordinate element that involves
a perception: The bridge is out; I saw it fall. On the
other hand, just as explanation makes uses of enthymemes
rather than tight logical sequences, so the perception used
for evidence may be implied rather than stated: The bridge
is out; I was there. Aristotle (Rhet. 2:20) suggests that
it is more effective for evidence to follow enthymemes in
making a point, since the enthymemes let the hearer know
what it is the speaker is trying to establish. If he
presents the perceptual evidence first, the hearer has to
work by induction from cases to principles, and he may
either induce the wrong principles or give up on the job
if he does not see where he is headed.

Analogy ties a subordinate subtree to a dominant
proposition not by logic but by likeness. Points of paral-
lelism are exploited to support the main statement. For
example, Leonard Bloomfield is said to have argued at a
meeting of the Linguistic Society of America, "Trying to do
linguistics without reference to meaning would be like going
into battle with one hand tied behind your back" (K. L.
Pike, personal communication).

Manner is difficult to fit in anywhere. It can
obviously be treated as a rhetorical supporting predicate,
though if it is one it might well turn out to merge with
attribution. There is some reason, however, to think that
it might be one of the roles that operates in lexical struc-
ture. It is related to the nonagentive semantic derivation
(Chapter 9) in that many predicates can lose their Agent
only in the presence of a manner element: the farmer shells
corn does not have a straightforward nonagentive counterpart
*corn shells or *the corn shells, but it does have a non-
agentive counterpart with manner: the corn shells easily.
Lakoff (1965) devotes the last part of his dissertation to
a discussion of the relationship of manner elements within
sentences to the passive and to other things. He concludes
that manner elements are probably derived by a process
similar to proposition consolidation (11.2) applied to a
state predicate that dominates the predicate which corres-
ponds to the main verb in surface structure. Whether this
same analysis is possible for manner elements larger than
the sentence I do not yet know. Consider the manner rela-
tionship of the second sentence to the first: He got ready
to shift down to go into the final turn. His hand trembled
slightly on the knob, and his teeth were clenched.

Setting predicates of location, time, and direction
are added in as extra arguments, like any hypotactic predi-
cate, to the proposition that dominates everything that
goes on within a single setting. As has already been
stated, some parts of narratives take place against a chang-
ing background; the settings of these are a special kind
called a trajectory. It can be fitted into the propositional
model as a particular kind of setting that has as its argu-
ments a list of different places. Each place is matched

against events dominated by the main proposition by means
of matching time indexes (3.1). Just as certain subtrees
of content are treated as coreferential with reference to
grammatical patterns like the reflexive, so arguments of
the trajectory subtree are treated as cotemporal (or
temporally coreferential) with event subtrees when it comes
to forming the surface expression of the trajectory. Each
of the points named in a trajectory is likely to be treated
in surface form as though it were the setting for one or
more actions, even though semantically it is simply a point
of coincidence between the trajectory as a whole and a
particular action. Xenophon's 'from there he marched on'
(Anabasis) moves Cyrus with his ten thousand Greeks in a
single sweep from Sardis to Cunaxa, with incidents along
the trajectory at various named points, for example.

        Much that goes under the name of identification
is covered by rhetorical predicates that have already been
introduced such as attributive, specific, and equivalent.
There appear to be three other rhetorical predicates that
are more narrowly identificational. Representative singles
out one element of a group and makes it stand for the group
as a whole; The average voter finds it hard to make up his
mind. All through the primaries he ... Replacement defines
one thing to stand for something else. In the case of
representation, the element singled out is a member of the
group it represents; but in replacement there is no member-
ship. The tie is arbitrary: Suppose we let this coffee
cup stand for the Grand Army of the Republic. The sugar
bowl is Forrest's men; I move the coffee cup so, and you
see how the gap is closed. Constituency identifies a part
in relation to some whole: He was one of the less impor-
tant members of the mob. Last Tuesday a pal of his ...

3. NEUTRAL PREDICATES

We have seen that the hypotactic predicates relate
a subordinate proposition to a proposition that dominates it,
and paratactic predicates dominate the arguments that they
relate regardless of what proposition dominates them. The
third and possibly most numerous kind of rhetorical predicate
is the neutral predicate, which can assume either form. In
some contexts it relates a subordinate proposition to another
proposition that dominates it, and in others it relates
two or more propositions on an equal basis. For example,
the predicate I call collection can dominate a set of
coordinate elements like the items in a grocery list:
onions, cabbage, two pounds of carrots, noodles, sausage, ...
without limit. The same collection relation can hold be-
tween one item that is taken as prominent or superordinate
and others that are associated with it in a subordinate way:
I went jogging with George and Henry. We did a mile and a
half. The use of we shows that I ... with George and Henry
defines a referential group, but the group is defined around
I.

Since each neutral predicate can have two forms,
there must be a way to distinguish the forms in a repre-
sentation of the underlying structure. Here is one possible
way: We need a Predicate Rule in the grammar (13.1). That
rule has to allow for more than one predicate in one pro-
position anyway, in order to accomodate multiple role
relationships of a single constituent like Agent-Source
for give and Agent-Goal for get. I therefore propose to
represent the hypotactic use of a neutral predicate by
adding to it a predicate (call it hypotactic) that is present
in hypotactic uses and absent in paratactic ones. This

would give the two examples in the last paragraph the
following underlying representations:

collection
   ONIONS
   CABBAGE
   TWO POUNDS OF CARROTS
   NOODLES
   SAUSAGE
   ...

past
GO JOGGING
Agent
   I
   collection, hypotactic
   GEORGE
   HENRY
index (i)
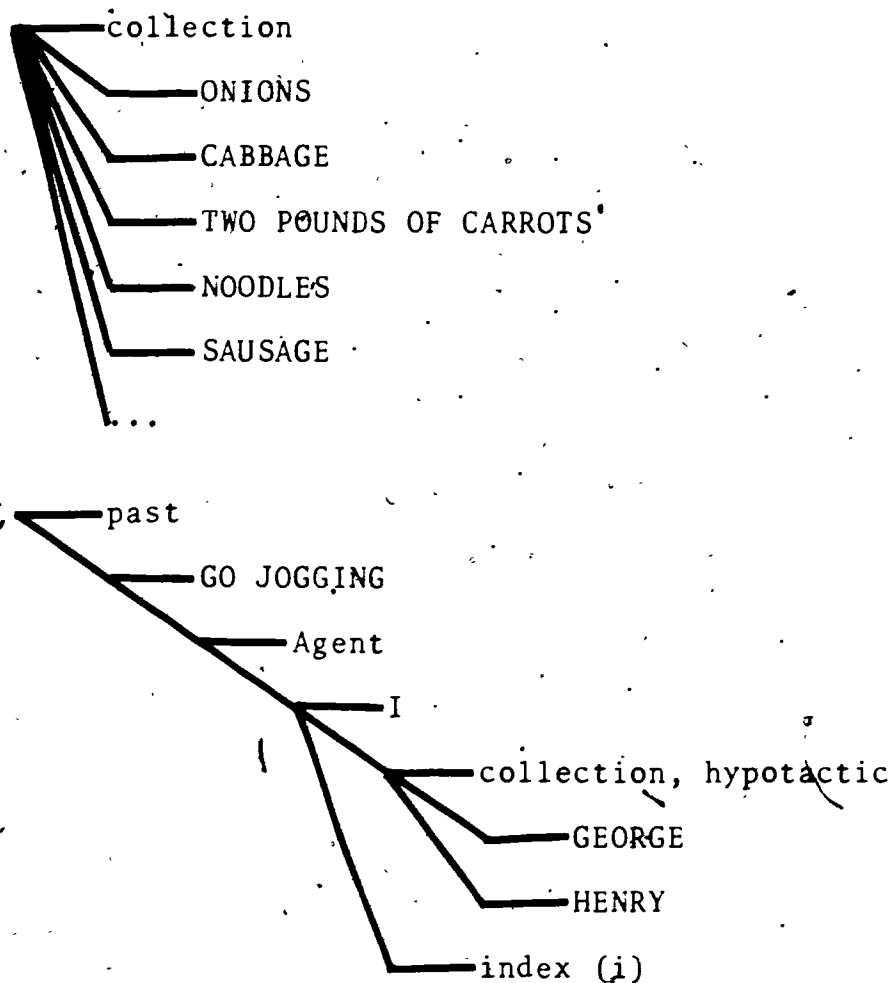
      The hypotactic form of the collection relation has
also been called comitative or associative. It has been
suspected of being a semantic role, since its expression is
frequently like the expression of one of them. A Liberian
friend, for example, used to comment on the seeming cold
bloodedness of American hostesses who one moment would be
telling one of their friends, "We're having Gus for dinner"
and the next would announce "We're having chicken for
dinner". He seemed relieved as he left the country for home

that at least they had all gotten their deep structures
right.

    Collection when applied to events takes on a differ-
ent form. Its surface expression frequently depends upon
the time indexing of the events. When the events take
place at different times the effect is one of temporal
sequence. When they have the same time index the effect
is one of simultaneous action. —Because the difference in
surface form (with signals like 'then' and 'later' for
sequence and 'while' and 'during' for simultaneity) can be
traced to the differences that are expressed by the time
index, it is therefore no longer necessary to retain tem-
poral sequence and simultaneity as separate predicates
(Grimes ms, R. Litteral 1972).   Both are instances of
collection applied to events that are indexed for time.
There are even hypotactic forms of time oriented collection:
after the other team arrived we sold the last tickets
subordinates the first clause, while The highway department
set up a jackhammer in my parking place. I took two Fizzy-
Seltzers. is paratactic. In simultaneous time we descended
on the place with mops and buckets, repaired the stairs,
swept out the chimney, then painted the entire porch is
paratactic, and while he was juggling a dozen eggs he kept
flipping hoops up with his feet that he caught around his
neck is hypotactic.

    Just as temporal sequence, simultaneity, association,
and collection merge into a single semantic relation whose
expression depends upon several extrinsic factors, so the
relations commonly referred to as condition, result, and
purpose seem to collapse into a single relation: covariance,
whose surface forms are distinguished by properties of its
arguments.
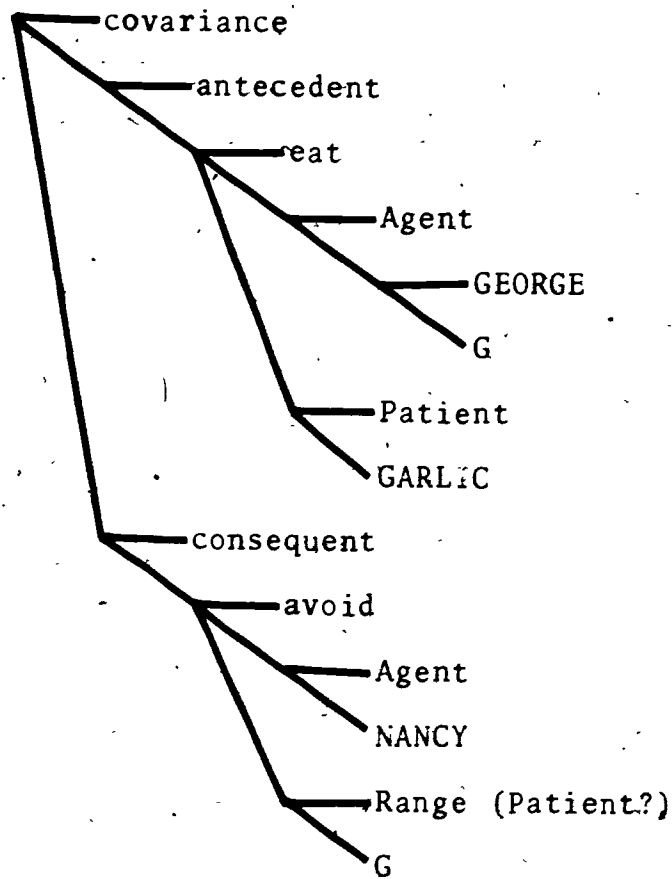
Figure 14.1   Paratactic form of covariance.
'George eats garlic.   Nancy avoids him.'

avoid, consequent
Agent
NANCY
Range (Patient?)
GEORGE
G
covariance
antecedent
eat
Agent
G
Patient
GARLIC
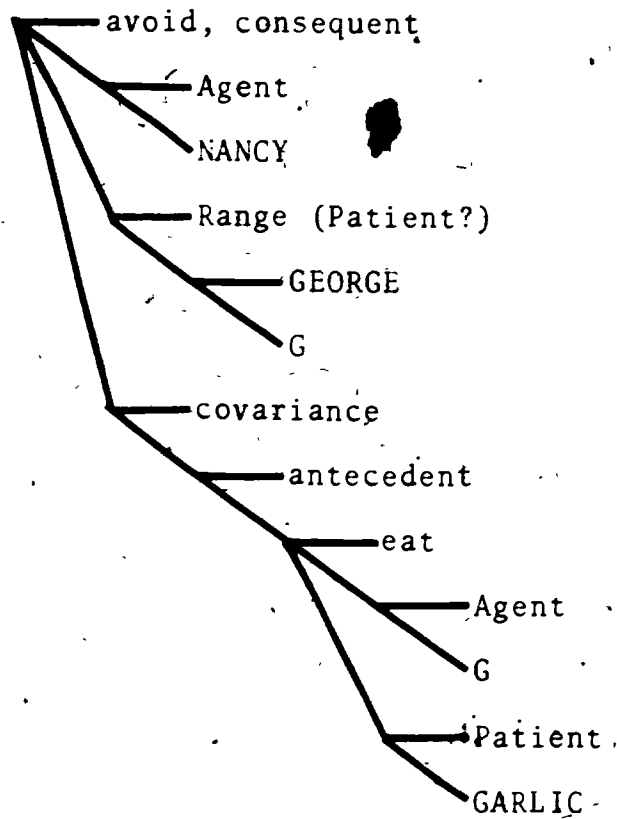
Figure 14.2 Hypotactic form of <u>covariance</u>
 with dominant consequent. 'Nancy avoids
 George because he eats garlic.'

The covariance relation normally requires two arguments, which may be labelled the antecedent and the consequent. Although these could be defined in terms of a pure logical relation like material implication, I think it is more realistic to think of covariance in its ordinary form as having a meaning more or less parallel to the logical relation, but to take those instances of it in which the logic is actually water tight as a special case that arises rather frequently in the classrooms of logicians and once in a while elsewhere. In terms of semantic structure, antecedent is a predicate that must be in the proposition that forms one argument of the paratactic form of covariance, and consequent is another predicate that must dominate the other.

The hypotactic form of covariance has as its single, argument a proposition that contains either antecedent or consequent. If the subordinate proposition has antecedent as its predicate, then the dominating proposition has consequent adjoined to its predicate to give a multiple predicate. If the subordinate is consequent, then the dominating one has antecedent adjoined.

To illustrate, let us look at the propositional structure of a paratactic use of covariance. For the utterance George eats garlic. Nancy avoids him. we might propose the analysis of Figure 14.1, covariance with two arguments, one of which has antecedent as its predicate and the other of which has consequent.

A hypotactic use of the same predicate is illustrated in Figure 14.2. This arrangement corresponds to a different perspective on the relationship of the parts, and

eat, antecedent
Agent
GEORGE
G
Patient
GARLIC
covariance
consequent
avoid
Agent
NANCY
Range (Patient?)
G
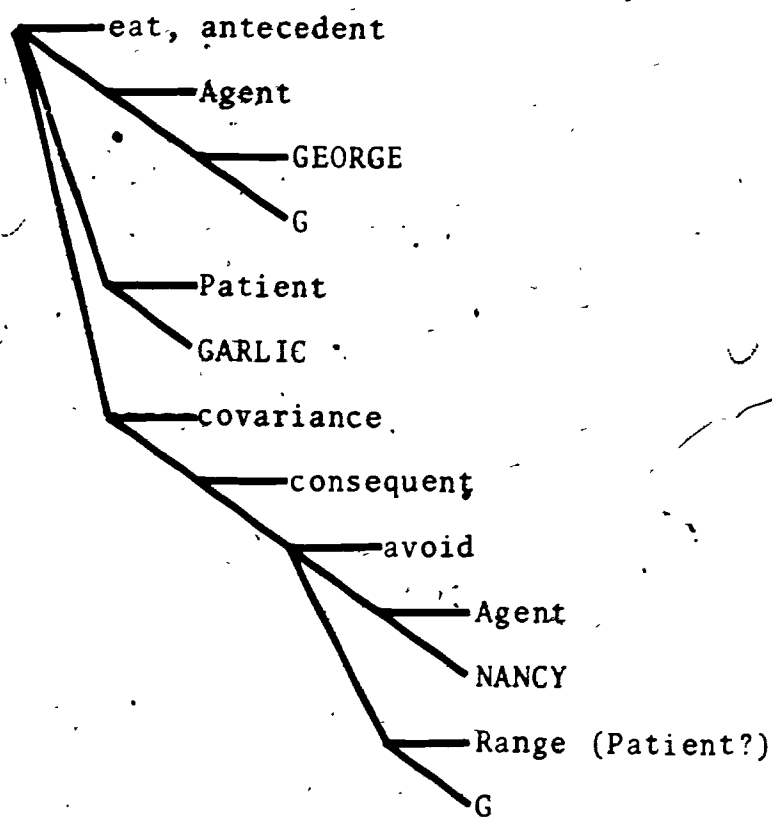
Figure 14.3 Hypotactic form of covariance
with dominant antecedent. 'George eats garlic,
which is why Nancy avoids him.'

yields a sentence like <u>Nancy</u> <u>avoids</u> <u>George</u> <u>because</u> he <u>eats</u>
<u>garlic</u>.   The consequent is dominant and the antecedent
subordinate.

When the antecedent is dominant and the consequent
is subordinate, the hypotactic form of <u>covariance</u> appears
as suggested in Figure 14.3.   It would be involved in some-
thing on the order of <u>George</u> <u>eats</u> <u>garlic</u>, <u>which</u> <u>is</u> <u>why</u> <u>Nancy</u>
<u>avoids</u> <u>him</u>.

My reason for distinguishing one form of hypotactic
predicate from another is this: relations of dominance
and subordination have to do ultimately with the staging of
parts of a discourse. The speaker imposes a perspective
on the purely cognitive aspects of meaning. This suggests
that whether a neutral predicate is taken as paratactic or
as hypotactic depends upon other decisions in the area of
staging. At the more deeply underlying levels of structure,
the distinction between paratactic and hypotactic might not
be important in itself, but only the result of the inter-
action between staging and content.

There are various surface expressions of the co-
variance relation. Which one is used depends partly upon
whether covariance has the paratactic or the hypotactic form,
and partly upon the makeup of its arguments. Conditions
are one common form for expressing covariance. They are
further divided in various languages according to various
criteria such as whether the antecedent is presumed to be
a fact or is only hypothetical or whether it is positive or
negative. The consequent also has different forms depending
upon whether it is taken to be a real possibility or as a

```
          covariance
            antecedent
              eat (1,1)
                Agent
                  GEORGE
                   G
                 Patient
                  GARLIC
           consequent
               intend (1,1)
                 Agent
                  G
                Patient
                  avoid (3,ω)
                    Agent
                    NANCY
                   Range (Patient?)
                    G
```
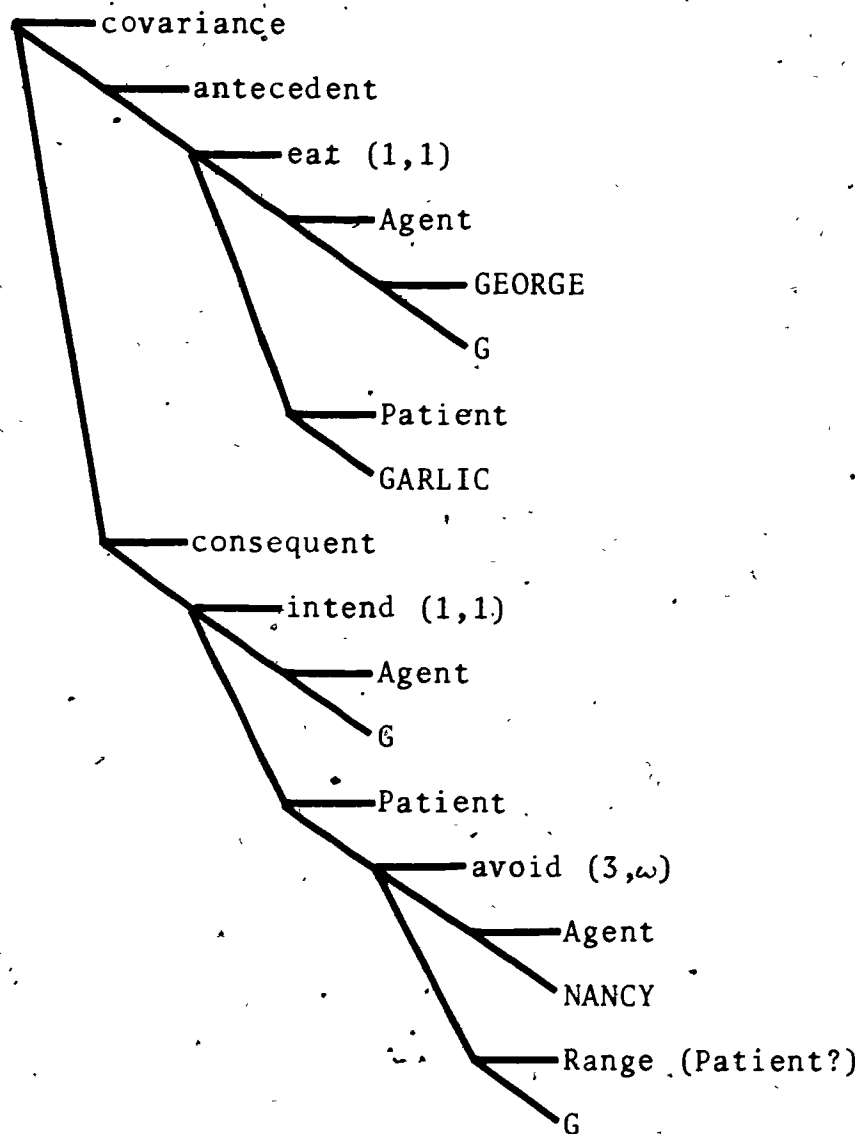
Figure 14.4 <u>Covariance</u> expressing purpose with
intervening predicate <u>intend</u> in the consequent.
'George eats garlic so that Nancy will avoid him.'

collateral assertion (4.4) that might have happened but did
not--the well known contrary to fact or irrealis condition
of classical grammar. The surface form may also depend on
whether the consequent is positive or negative. I suspect
that conditions represent the hypotactic form of covariance,
with the antecedent (protasis in the classical terminology
for conditions) subordinate to the consequent (apodosis);
but this may vary from language to language. Reasons appear
to be closely parallel to conditions in these terms:
because ... therefore is perhaps only a slightly more for-
mal version of since ... then, which in turn accords with
those varieties of if ... then in which time sequence is
not too important.

Time sequence, on the other hand, is extremely
important for purpose and result relationships. Result can
be characterized as a condition on time indexing of the two
arguments: the antecedent must precede the consequent in
time. Purpose is similar to result except that the conse-
quent dominates an intervening predicate intend whose
Experiencer must be coreferential with the Agent of the base
predicate that carries the main semantic content of the
antecedent. The base predicate of the consequent is
Patient of intend. This relationship is diagrammed in
Figure 14.4, which shows the paratactic use of
covariance with time indexing and intend as a means of
showing purpose.

Adversative is the predicate for collateral rela-
tionships. In its paratactic form it simply presents what
happened along with what did not happen, or along with what
the hearer might think happened: it was a case of sink or
swim. More frequently the things that are not so are sub-

ordinated to the thing that is being asserted: I'd rather
have coffee than tea.[4]

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[4]Another possible analysis is to have all paratactic
usages be assigned to the alternative paratactic predicate
and the hypotactic ones,to adversative, which is then no
longer neutral but hypotactic. If this can be done, however,
it could equally well be argued that the two constitute a
single neutral predicate alternative.

It would simplify the trees that represent semantic
derivations if some of the information communicated here by
means of rhetorical predicates could be added as features
to some of the elements. This approach would give a repre-
sentation more closely in line with some that Chomsky has
suggested. The result would be that many of the connective
function words in surface structure would be introduced by
particle transformations, similar in kind to segmentaliza-
tion transformations that add affixes to words (Jacobs and
Rosenbaum 1970).

The main drawback of this approach lies in the fact
that semantic features are associated in a Chomsky grammar
with lexical items, not with nodes that dominate major
constituents. In a really high level relationship (like
the one implied by the therefore in Romans 12:1, which is
generally agreed to link the first eleven chapters as ante-
cedent with 12 through 15 as consequent) it might not be
possible to decide which lexical item the rhetorical fea-
tures are added to, and the transformational component would
have to raise them to a much higher node anyway. It makes

more sense to assert the relationship at the point where it
belongs.[5]

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[5]Aside from this remark, I am bypassing the dis-
cussion of the place semantic features play in the lexicon
itself. Since it appears possible to handle ordinary
semantic features like +human, +count by means of the con-
cept of associative linkages within the lexicon, I find no
compelling reason for building them into the theory in a
different though more traditional form.

Another reason why it seems best to stay away from
a feature representation is the one Glock and I mentioned
in 1970: the property of redundancy, which is useful when
applied to phonological feature systems, verges on being
absurd when applied to semantic feature systems. Redundancy
fills in one feature in the presence of another; for example,
in English all phonological segments that are +nasal are
also +voiced by a regular entailment that says something
that needs to be said about English. Phonological redun-
dancy fills in a specification for every feature in every
segment. To try to apply this in semantic space results
in a mountain of irrelevant feature specifications being
heaped up over nearly everything, with no corresponding
gain in insight into the system. There are local redundancies
such as +human entailing +animate, but they have to be
stated in a way that provides reasonable local boundaries.

In short, whatever the utility of semantic features
may be for talking about lexical relationships--and they
are not the only way to talk about them in a generative
grammar--they show little promise yet as a vehicle for ex-
pressing rhetorical relationships. Propositions, on the

other hand, give a way of making useful and interesting
observations in which the relevant information is located
approximately where it belongs.

CHAPTER FIFTEEN

MODALITY

[This. is the first of several chapters that have been
projected but could not be finished in time for this report.
It consists of a discussion of tense; aspect, and mode
viewed from the point of view of the part they play in
discourse.]

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CHAPTER SIXTEEN

DISCOURSE SEMANTICS AND THE SURFACE HIERARCHY

[This chapter discusses the relationship between
underlying semantic structure as developed in Chapters 8
through 15 and surface hierarchies. It looks at standard
organizing templates such as plot from this point of view.
It also suggests alternatives to propositional grammars of
the variety defined in Chapter 13.]

CHAPTER SEVENTEEN

LINEAR ORGANIZATION

[This chapter gives an introductory overview of the
following five chapters. Whereas the preceding chapters
have been concerned with various kinds of hierarchical
organization, both in semantics and in surface form, the
phenomena discussed in Chapters 18 through 22 are largely
independent of those hierarchies.]

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CHAPTER EIGHTEEN

PARTICIPANT ORIENTATION

The study of participant orientation systems[1] has

[1] This chapter is adapted from a paper that was presented to the Linguistic Society of the Philippines in July of 1971 and submitted for publication in the Philippine Journal of Linguistics.

turned out to be helpful in the analysis of some kinds of texts. It starts out from two simple ideas.

The first is that in any single event in a story there are very few participants involved,[2] usually not more

[2] This principle was suggested by Bellman's approach to dynamic programming, in which the number of factors that influence any decision in an optimal sequence of decisions is taken to be very small (Bellman and Dreyfus 1962).

than three. The other basic idea is that the relationship of participants to events in a sequence is conventionally constrained in some languages. In other words, there is a regular sequencing of the orientation of participants to events through a story. Becker (1966) suggests that the point where this orientation changes is structurally significant.

The conceptual machinery for participant orientation was worked out by Ivan Lowe (1969). He first traced the

principle discussed in Chapter 5 that intervenes when
pronominal reference is embedded in quotations, a problem
originally proposed by Kenneth L. Pike (Pike and Lowe 1969).
The principle turned out to be not only simple but complete
in the sense that there is no depth of embedding for which
it does not apply.   It is worked out using mathematical
group theory.

Later Lowe worked with Mary Ruth Wise, who had
studied the identification of participants in discourse
(1968). On investigating where pronouns and noun phrases
come in text, they began to notice a regular rotation of
participant reference. This rotation, however, applied to
sequences of events rather than to embedding. They applied
the group principle to discourse (Wise and Lowe 1971) and
found that there is an independent basis in the referential
system for recognizing things that would also need to be
recognized on other grounds as paragraphs, whether by
unity of setting, by introduction of characters, or by
linkage. The exact relation between participant orientation
and paragraphing, however, seems to be language specific.

1. PERMUTATIONS

Before going into participant orientation as a
linguistic phenomenon, a concise way of talking about it
in the abstract is needed. First of all, there are only a
few ways of arranging two or three items. For example, if
we have any A and any B we can put them either in AB order
or in BA order, and no other.

To apply the Wise-Lowe model to text, an appropriate
order principle or ranking of elements has to be established
to permit different orderings to be distinguished. The

ranking used is based on underlying role or case (Chapter 8).[3] Agent is the highest ranked role; the others are

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[3]The ranking itself was arrived at empirically, but seems to hold up in a number of languages. Because of current uncertainty on theoretical grounds about whether instruments and benefactives are best considered primitive roles or abstract predicates, I am not prepared to integrate participant orientation into a general theory of the semantic structure of discourse. It is quite possible that the sequencing of role sets is another kind of topicalizing mechanism (Chapter 21). If so, it operates in the area of assigning the referential indexes that correspond to participants to underlying roles, and thus controls the choice of lexical items indirectly. Forms of topicalization with which we are more familiar operate on surface order; this is considerably deeper.

---

ordered below it in a way that will be given in detail later.

To change the ordering of only two items so that the one that ranked lower in case now ranks higher and vice versa is an operation of reversal (r). For two items, say 1 and 2, reversal is symbolized as (12), which expresses a permutation in which the elements in the parentheses are moved one position to the right, and the last element is brought around to the front; the notation is a general one that permits permutations of any number of elements to be included in a single statement. Here it has the effect of interchanging 1 and 2: (12) = 21.

Reversal is the only orientation operation in certain texts, including the text on which the idea was first worked out. It starts out with one character as Agent and the next

as, say Goal, then reverses so that the second character is
Agent and the first is a lower ranked role. A second rever-
sal brings them back into the original orientation, which
signals a new paragraph.[4]

---

[4]Philippine languages appear to rely to a small
extent on participant orientation; but more explicit means
of identification via pronouns and noun phrases are common.
Some languages of Papua New Guinea (S. Litteral, ms),
Bolivia (Briggs, ms), and Nigeria (Bradley 1971) make more
extensive use of it.

Another text based on reversal is reported by
Virginia Bradley for Jibu of Nigeria (Bradley 1971). The
characters are a bridegroom and his group and the narrator
and his group. The story starts with the bridegroom extend-
ing an invitation to the narrator, an Agent-Goal situation
in which Agent ranks higher than Goal. The narrator res-
ponds by going to where the bridegroom is; the narrator as
Agent now outranks the bridegroom as Goal. Then the bride-
groom and his group do something as joint Agent with refer-
ence to the guests at the wedding as a Patient group; and
the guests, changing to Agent, react. The structure of the
text revolves around the regular return to the initial
configuration of bridegroom as high ranking and narrator as
low ranking; each reversal that gives this state begins a
new section.

Other texts juggle three participants. There are
six different possibilities of rearranging three things.
(The number of possibilities is equal to the factorial of
the number of things being permuted. Factorial $n! = n (n-1)$
... 1.) To generalize the notion of operations, a reversal
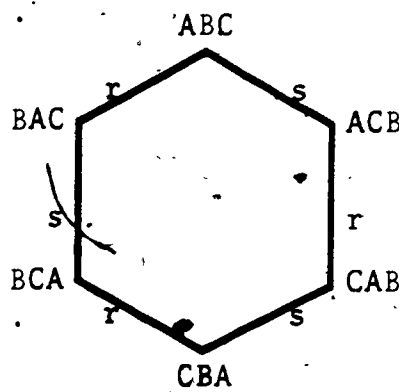
Figure 18.1.   Permutations of three
                things.

involving three things is defined as (12) (3), signifying
that 1 and 2 permute with each other and 3 permutes with
itself, or in other words stays where it is.

A second operation, switch (s), instead of inter-
changing the first and second things, interchanges the second
and third things: (1) (23). Notice that the reversal of
a reversal ($r \cdot r$ or r^2) goes back to the starting arrange-
ment, and so does the switch of a switch ($s \cdot s$ or s^2). This
is the notion of an inverse.

A third operation, identity (I), the operation of
doing nothing (1) (2) (3), completes the system. These
three operations handle all participant orientation orders
for three participants, and are related as $I = r^2 = s^2$.

Using A, B, and C to stand for participants and
left to right order for high to low role ranking, let ABC
be the base or identity state of the participants. Then
$r(ABC) = BAC$, which can be called the reversal state, and
$s(ABC) = ACB$ can be called the switch state. The states
are named from the operations it would take to get to them
starting from the ABC or identity state. Going on, BCA is
the rs state: $rs(ABC) = s(r(ABC)) = s(BAC) = BCA$. CAB is
the sr state: $sr(ABC) = r(s(ABC)) = r(ACB) = CAB$. CBA is
the srs or the rsr state: $srs(ABC) = s(sr(ABC)) = s(CAB)$
$= CBA$, but also $rsr(ABC) = r(rs(ABC)) = r(BCA) = CBA$. We
summarize all this in Figure 18.1.

These operations, simple and compound, form a
mathematical group. That is, they have the following four
properties: (1) Closure. Any sequence of operations results
in another operation in the same system. No sequence of
operations goes out of the system. For example, rsIrrsrIrss

= r, since $r^2 = s^2 = I$. (2) Associativity. Grouping
operations by parentheses makes no difference. $(rs)r = r(sr) = rsr$. (3) Inverse. Every element has an inverse,
and there is no sequence of operations that cannot be inverted
by another sequence of operations. $r \cdot r = s \cdot s = sr \cdot rs = rs \cdot sr = rsr \cdot rsr = srs \cdot srs = I$. (4) Identity. There is an operation
I which, applied to any operation in the group, gives the
same operation: $I \cdot r = r$, $I \cdot s = s$, and so forth.[5]

---

[5]An equivalent group could be defined starting with
two other operations, say $x = (123)$ and $y = (13)(2)$ together
with I. Defining the r and s operations in the context of
role ranking, however, give us a linguistically insightful
way of talking about the phenomenon that would not be as
apparent if we took other operations as primitive.

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2.   SEQUENCES OF PERMUTATIONS

         Orientation, as mentioned requires a ranking of
semantic roles of cases. The ranking that seems to give the
clearest results is a composite of rankings that have been
worked out in several languages. It is tantamount to a
scale of relative involvement in actions: Agent, Experiencer,
Source, Goal, Patient, Instrument, Noninstigative Cause,
Benefactive, Factitive (result), Range (location), Essive,
and zero to represent a participant who is wholly removed
from an action. On this scale Agent outranks Patient and
Experiencer outranks Benefactive.

         A text in Ayore of Bolivia (Briggs ms) illustrates
ranking with three participants. The first sentence is an
introduction or verbal title: 'I killed a jaguar on another
occasion'. It has two participants, narrator and jaguar,

Agent and Patient. If A is the narrator, B the jaguar, and
C a third character not yet mentioned, and Agent outranks
Patient and Patient outranks zero, the ranking is ABC:
A kills B with C not mentioned.

The story goes on: 'I killed a jaguar' I(ABC) = ABC.
'He jumped at me' r(ABC) = BAC. 'I lanced him as he came'
r(BAC) = ABC, 'but he took out my lance' r(ABC) - BAC,[6]

---

[6]The lance can be considered a prop (3.2) rather
than a participant because whether it is considered or
overlooked makes no difference to the orientation analysis.
Note Wise and Lowe's partitioning of referents, so that
their analysis is based on the relationships of the people
alone.

'and I followed him and found him far away' r(BAC) = ABC.
'I went to kill him with my lance' I(ABC) = ABC, 'but
Bague's father found me' sr(ABC) = CAB, 'and killed him
right under my nose' s(CAB) = CBA. 'He and his friends
carried him back' I(CBA). The end of the story has the
form of a coda: 'The place where I killed him is in that
direction' srs(CBA) = ABC.

The regular progression of events in a story is
carried by single permutation operations: r and s. Whenever
we get composite operations, sr, rs, rsr, or srs, there is
a surprise, an interruption, or a point where things go
wrong; and this happens not only in Ayore but in several
languages. /

In Koine Greek, in the first chapter of St. John,
John tells his disciples who Jesus is, his disciples follow
Jesus and talk with him, then Andrew goes off and gets his

brother Simon and brings him to Jesus. Jesus says to him,
"You are Simon, son of John; you shall be called Cephas"
(meaning a stone). The point where Jesus addresses Simon
directly is an sr transition, the surprise point of the
whole narrative. What happens is completely unpredictab
to Peter. The story up to that point goes by r, s, and
But that is the point at which Peter gets the shock of his
life.

Back to the jaguar story, the same thing happens
From the point of view of the narrator, the jaguar hunt has
been going normally. Then just as he is standing over the
jaguar ready to finish him off with his spear poised in the
air, out of the jungle comes C and kills the jaguar instead.
The shock even shows up in the linguistic structure at this
point.

Going from the actual killing of the jaguar to the
coda, which reminds us that it was really A's jaguar hunt,
we have a concise description of what could be called a
devious mental process. The narrator brings the story back
to the state in which he started it, the equilibrium state
or base line, even at the cost of twisting the arm of
reason in order to get back there.

One function of an equilibrium state, as Labov and
Waletzky point out in their paper on narrative structure
(1967), is to relate the narration itself to the performative
situation in which the narration is given. The narrator
does that first of all by identifying himself in the title
as both the teller and the major actor. The phrase 'on
another occasion' in the introduction has the effect of
referring the story to some entirely different time. At the
end, 'the place where I killed him was in that direction'

brings the story back to the place of telling, so that at
both ends it is locked into the performative. Not all
stories do this, but it is a common device. The English
formula Once upon a time... matched with They all lived
happily ever after has that function, among other things.

'3. PERMUTATION STATES

Up to now we have labeled operations. We can also
label states in terms of the operations that are performed
in order to get to that state from some other state. Looked
at in this way, BAC is the reversal state if we take ABC as
the starting state, and CBA is the rsr or srs state.

In a story with an identifiable starting state and
ending state such as is defined by the title and the coda,
we can go through and name the states, taking the starting
state as the identity state, and using the operations to
name each of the six states of the system. ABC is the I
state, BAC the r state, ACB the s state, BCA the rs state,
CAB the sr state, and CBA the rsr or srs-state, each calcu-
lated with reference to the identity state. During the early
part of stories the states tend to stay around the I, the r,
and the s state. The tension point of the story, however,
almost always comes in the srs state. In the jaguar story,
'C killed B right under A's nose' is the srs state, and is
obviously the tension point. This gives us a formal means
of recognizing it.

The notion of a tension state is distinct from state
transition operations. The composite operations sr, rs,
and srs give jumps in the action. But stories can build up
to an srs tension state without any jumps. Also, the develop-
ment from the tension state back to the equilibrium state

is frequently smooth.   Therefore the information we get from
plotting states and the information we get from plotting
sequences of operations do not necessarily coincide.

In texts with a recognizable identity state there
is an interplay between the role of the character in the
discourse as a whole and the role of the character in each
action, as represented by the same system. Discourse roles
distinguish the participant who is characteristically the
initiator throughout the discourse from the one who is
characteristically the reactor throughout the discourse,
and cast all others in a tertiary role. In the jaguar story
A is the one who moves things along. The jaguar is cast
as the reactor, and C is neither initiator nor reactor.
The identity state is then the one in which the initiator
is acting as initiator, the reactor is acting as reactor,
and the other is acting as other: ABC. In other configura-
tions like BAC or CBA there is a temporary discrepancy
between the relation of the participant to a single action
and his overall role in the story. State analysis gives a
kind of measure of that discrepancy from the identity state,
which fits the idea of a tension state.

There are texts for which it is hard to tell what
the identity state is; possibly no identity state exists for
them. The only significant thing in this case is the sequence
of operations that give the the transitions between one
state and another. There it still holds true that the smooth
development of the story is built on identities, switches,
and reversals, and surprise points follow composite operations.

In some languages where up to now it has been hard
to tell what pronouns refer to, one of the principles that
may operate is this regular progression of the relation of

ELEMENTARY PERMUTATIONS

$r = (12)(3)(4)$

$s = (1)(23)(4)$

$t = (1)(2)(34)$

$I = (1)(2)(3)(4)$
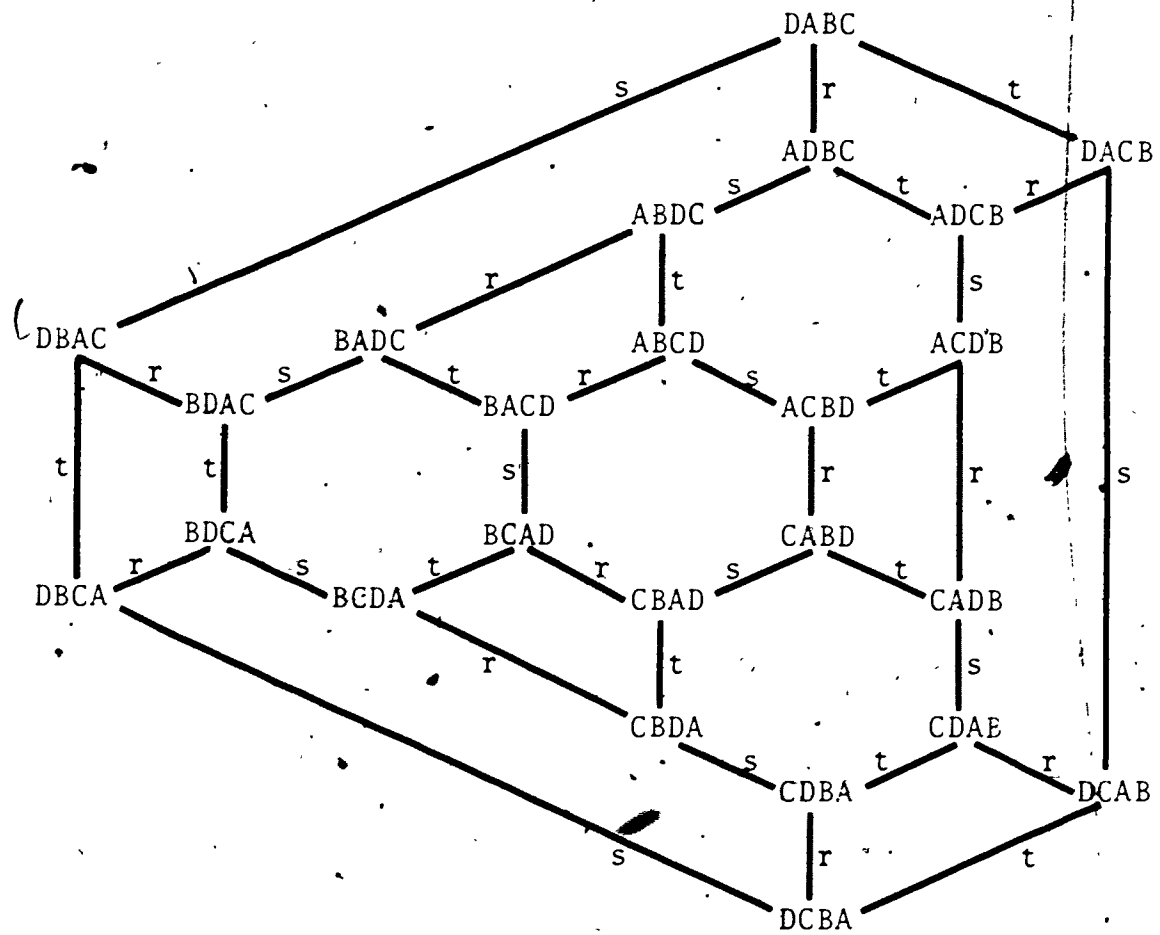
Figure 18.2. Permutations of four things.

participants to actions (Larson ms). If it is built so
deeply into people's mental makeup as to recur in widely
spaced languages around the world, it could operate even
when other more obvious principles of reference do not.

The usual principles for pronoun reference include:
who was mentioned last? who is the story about? who is
the paragraph or sentence about? Lines of distinction in
a pronoun system, like person or number or gender distinc-
tions, also serve to keep reference sorted out. But in a
story with four participants, all of them 'he', and in a
language that is sparing of pronouns anyway, there must be
some other principle operating. We observe as a matter of
fact that people can keep references untangled in a situa-
tion like this. (Not everybody keeps all his pronoun refer-
ences untangled all the time, even in languages that make
this easy.) When they do get their reference right, what
are they doing? Participant orientation is a possible model
for part of it.

Four participants operating at once has not been
found yet. Nevertheless, the Figure 18.2 covers four. In
addition to the three operations of identity, reversal, and
switch, there is a trade operation (1) (2) (34). The hexagon
in the middle of the figure corresponds to the diagram given
earlier. In three dimensions Figure 18.2 would come out a
fourteen-sided figure composed of eight hexagons and six
quadrilaterals.

Bradley (1971) describes the expansion and shrinkage
of participant groups as already mentioned; the partici-
pants in the orientation system do not necessarily include
the same individuals at each stage. Part of her text also

includes a change of scope in the orientation system. A
group that throughout the main part of the text is one parti-
cipant, the initiator group, appears in one scene in a
closeup view that splits the members of that group temporarily
into initiator and reactor subgroups. After that scene the
group returns to single participant status without further
internal differentiation.

Role substitution takes place when a series of indi-
viduals appear in turn in the same relation to one of the
participants. For example, in an Ilianen Manobo tale (Hazel
Wrigglesworth, personal communication) a lizard, the main
character, confronts a deer, a woodpecker, a crocodile, and
a shrimp in turn. While the lizard is talking with one of
them as initiator to reactor, the reactor mentions the next
one in the series, and is told to call him: the lizard (A)
tells the reactor (B) to call the next character (C). The
next character appears and the former reactor drops from
the story. But rather than the next character's reply to
A's call being a switch-reversal, which would give CAB, the
character who was first mentioned as C rather seems to take
over the reactor role of B by substitution, while the former
B drops out of sight. By role substitution, then, the
operation becomes a simple reversal: from ABC to BA(C),
but with B_2 taking over the identity of the former C and
the former B_1 dropping out as a dummy C, no longer active.

CHAPTER NINETEEN

COHESION

Most of linguistics has been directed toward the
study of the content structure of language. I have already
mentioned that there seems to be evidence for two other
kinds of structure that interlock with content. The first,
which I discuss in this chapter, is the system of cohesion,
which has to do with the way information mentioned in speech
relates to information that is already available. The other,
which is introduced in Chapter 21, is what I call staging.
It has to do with the kind of perspective from which each
section of a discourse is presented to the hearer.

Cohesion, probably because it is partly time dependent,
tends to be dropped into the performance category of
Chomsky's competence-performance dichotomy (1965). Even
within the limits for which that distinction is useful,
however, I think it must be granted that part of the speaker
or hearer's knowledge of his language includes the capacity
to assign and interpret correctly the features that signal
cohesion, to recognize aberrations, and to disambiguate--;
in short, if there is a basis for talking about linguistic
competence in the area of content, where most of the
discussion has taken place, whatever arguments justify it
there also support it in the area of cohesion.

Much of my thinking on the subject of cohesion has
been influenced by Michael A. K. Halliday's articles on
transitivity and theme in English (1967a, b, 1968). I have,
however, departed from his terminology for two reasons. The

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first is that some of the terms he uses are chosen from the
gray area of nomenclature in which each linguist does that
which is right in his own eyes, and few do the same as
anyone else. His terms 'unit' and 'focus' fit here; there
are enough different uses of each in the current scene that
his use, no matter how carefully it is defined, is bound
to be misunderstood. My own preference is for terms that
are a little easier to associate with the phenomena they
describe, and a little less likely to be used in a different
sense by the next person who happens to be looking for a
term. The second reason for not following Halliday's
terminology is that other terms he uses tend to be put into
morphological paradigms that are not transparent. For
example, he distinguishes 'mode' and 'modal' in a tightly
defined way; but I (and a number of other linguists I have
asked about it) have to keep turning the pages back to keep
track of which means what. I have tried, therefore, to
select terms that stand far enough apart from each other in
the associative relations I have for each that I can retain
some idea of how they are distinguished as well as the fact
that they are distinct.

I follow Halliday rather than Wallace Chafe (1970a)
is discussing cohesion because Chafe blurs the distinction
between information structure or cohesion on the one hand
and thematization or staging on the other. For his purposes
this lack of distinction does not hurt, because his remarks
on the distribution of new and old information apply mainly
to unmarked thematization in Halliday's sense. He does not,
for example, worry about cases like my hat I had to leave
at the cleaner's, under the circumstance that the theme hat
and the most predictable information I are different. In a
fuller treatment of the phenomena, or in an expansion of

his generally stimulating ideas so as to embrace discourse,
I doubt that Chafe would remain satisfied for long with his
initial underdifferentiation.

1. INFORMATION BLOCKS

The first observation to be made about the cohesive
structure of language is that the speaker, in addition to
having to decide on the content of what he is talking about
and how it is to be organized, decides also how much of it
he thinks his hearer can take in at one time. He makes this
decision in the light of what he thinks the hearer already
knows. The package of information that results, or
i̲n̲f̲o̲r̲m̲a̲t̲i̲o̲n̲ b̲l̲o̲c̲k̲ (Halliday's information unit), may or may
not correspond to some easily recognized substring of the
content. In English its extent is signalled by a single
intonation contour, while in Oksapmin (M. Lawrence ms) it
is delimited not only by intonation but by verbal inflection
as well. An utterance like THIS / is the FIRST TIME / we
have EVER / DONE anything like this (using capital letters
for words that are intonationally prominent, following
Gunter 1966, and slashes to separate intonation contours) has
a different information blocking from This is the first time
we have ever DONE anything like this, even though they are
the same in content.[1]

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[1]This simple intonational notation overlooks the
kinds of pitch patterns that are involved in intonation and
a good deal of the dynamics as well. These factors, however,
seem to be controlled by the speaker's attitude on the one
hand, and by certain grammatical traits on the other. They
are outside the system that communicates cohesion as such,
which is all this notation needs to represent.

Several factors enter into the decision to block
information in one way or another. The first factor is the
information a speaker has already given. Anything that the
speaker feels is already clear is not as likely to be singled
out by being put in a separate block as are expressions for
things concerning which he is sure the hearer knows nothing.
The same thing holds for expressions that refer to the im-
mediate situation of speech. Performative elements like I
for the speaker and you for the hearer, or this and that
for visible entities in their surroundings, are not likely
to be put in separate information blocks, especially after
attention has been called to them linguistically for the
first time.

Besides these first two factors, which we might
label textual and situational for convenience, there seems
to be an overall decision on the part of the speaker about
the rate of information injection that he wishes to estab-
lish. In English the highest rate of information injection
is that of telegraphic style, in which the apparatus of
cohesion is squeezed to the minimum that a tortured grammar
will permit. The famous sighted sub sank same of World War
II is about as far as we can go in making every word count.
In standard journalistic style we get a high rate of infor-
mation injection in the lead paragraph and a constant de-
crease in the rate for succeeding paragraphs. At the other
end of the scale we might have the well padded term paper
or the television talk show, where the frequency of intro-
duction of new information per line or per sentence is
decidedly low.

The natural tendency is for the speaker to help
the hearer by making his information blocks short when his

rate of information introduction is high. The wartime
message cited in the last paragraph, for example, is usually
punctuated with a comma in the middle, presumably to indi-
cate blocking, though I doubt that the original dispatch
contained one. On the other hand, when the speaker is
acting as though his rate of new information is low, the
tendency is for the information blocks to be long. As an
example we might consider a linguist who is uncertain of
himself presenting a paper to an audience who he suspects
know nearly everything he is going to say anyway.

There are two interesting deviations from this
pattern in contemporary English. The first is the practice
of some radio and television newscasters to speak in rather
large information blocks even though they are communicating
new information at a high rate. When compared with the
practice of those announcers (most sports announcers and
some newscasters) who follow the normal rule of short blocks
for a high rate, their adopted pose makes sense. If their
information blocks were as short as the newness of the news
implied, they would leave their listeners breathless and
gasping at the end of five minutes. By lengthening their
information blocks they suggest the fiction, "You are well
posted on the world situation. Nothing I have to say will
surprise you. There are, however, a few details I can add
to what you already know, and these may interest you."
That listeners accept this fiction gratefully is backed up
by what appears to be a positive correlation between the
salary of the newscaster and the average length of his
information blocks.

The other exception is in the opposite direction.
As is well known, politicians tend to speak in very short

information blocks: <u>My .FRIENDS / I COME here this evening /</u>
<u>to TELL you / that we are ALL / FACED / with a GRAVE DECISION./</u>
<u>We MUST / ELECT / the BEST / most HIGHLY QUALIFIED / CANDIDATE /</u>
<u>from among our RANKS.</u> Here any hearer who could not predict
the rest of the speech himself is simply a novice at politics.
The content is highly redundant; the real rate of information
injection is extremely low. The blocking, however, is char-
acteristic of a very high rate of information injection.
Perhaps the fiction is this: "You and I need to feel that
what we are doing is important. Important things are char-
acterized by a high information flow. I will talk and you
will listen under the trappings of a full flow of information,
and neither of us will question how new the associated
content really is."

Information blocking segments an oral discourse
into an integral number of blocks, with no fractional
residue. We would not, for example, find a speech that
consisted of 103.7 information blocks, even though we might
find speeches of 103 or 104 information blocks. Some
writers punctuate by information blocks, though my experience
is that most editors punctuate by surface grammar more often
than by information blocking. (Example: <u>Some writers,</u>
<u>punctuate by information blocks, though my experience is,</u>
<u>that most editors punctuate by surface grammar, more often</u>
<u>than by information blocking.</u>)

Cohesion in discourse appears to involve the further
grouping of information blocks into larger units, rather
like the way sentences are grouped into paragraphs in written
discourse. The intonational grouping of mesosegments in
Sierra Nahuat (Robinson 1966) into macrosegments reflects
this kind of block grouping. In Oksapmin (M. Lawrence ms)

the normal inflection of verbs aids in delimiting information
blocks, working along with intonation; but there is a special
final inflection that terminates a group █████████ mation
blocks.

In English it seems possible for one information,
block to be interpolated within another in a parenthetic
fashion: Bill wrote / or SAID he was going to write / the
NOTE last week. This utterance consists of two information
blocks, even though phonetically it consists of three breath
segments (Grimes 1969)   The first has no point of intona-
tional prominence in it, and hence is capable of being taken
as part of the third breath segment, forming a two-part
information block that is interrupted by the second breath
segment. The second segment is itself a complete information
block.

Although we have already seen how information
blocking is independent of content, the two lock together
at certain points. To explain these points it helps to make
use of the notion of markedness, mentioned earlier in
Chapter 8.3. There are many things in language that come
in sets: pronouns, vowels, affixes, certain transformations,
and many others. In many of these sets there is one member
that seems to be used in the absence of any special reason
for using one of the others. All the other members of the
set have some more specific motivation attached to their use.
The members of the set that are picked up under specific
conditions are called the marked members, while the one that
is used by default is called the unmarked member.

Information blocks that correspond to single clauses
are unmarked in their relationship to content organization.

In English, and in several other languages at least, we
make our information blocks the same size as our main
clauses unless there is a particular reason for not making
the two match.   Bill wrote the NOTE last week, for example,
is a single clause uttered as a single information block.

Embedded clauses are normally considered as infor-
mationally part of the matrix clause (that is, the clause
within which they are embedded)'. They are not blocked
separately in the unmarked state: The people who visited
us wrote the NOTE last week. Clauses used as adjuncts to
other clauses within sentences, however, are normally split
off intonationally rather than being treated like embedded
clauses: Bill wrote the NOTE / as he SAID he would is the
normal form. Both the dependent and the independent clauses
are unmarked information blocks in this case. ·

A marked information block is one that does not
correspond to an independent or dependent clause. In other
words, there is some reason for overriding the natural
affinity between clause boundaries and information block
boundaries. The most common kind of marked information
block covers less than a clause: BILL / wrote the NOTE last
week. In most speech the average number of information
blocks per clause is somewhat greater than one, though less
than two.

More than one clause may be included in a marked
information block: Bill wrote the note last week and then
he had to leave TOWN.

The use of marked information blocks implies a
judgment on the part of the speaker about the hearer's

capacity to assimilate what he is saying. It is related
to the fact that each information block has a center that
represents the least predictable part of the block; this
will be discussed in the next section. If everything that
is being said is predictable, the block may be allowed to
grow fairly long,[2] as in the last example. On the other

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[2] Since information blocking is connected with
intonation contours in English and many other languages,
physiological constraints on the length of contours can
produce the effect of blocking even when the speaker's
estimate of his message does not demand the end of a block.
The limiting constraint is that the speaker has to take a
breath once in a while regardless of his information
structure.

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hand, a large quantity of new information ordinarily calls
for more frequent blocking so as to provide more centers.
We have already considered how newscasters and politicians
manipulate this blocking principle, the one to play down the
quantity of new information, and the other to give the
appearance of new information even when there is none.

Marked information blocking may also be used when
the speaker wishes to prevent misunderstanding of content
structures that are otherwise ambiguous. For example,
within a noun phrase there may be postnominal qualifiers
that define or restrict the reference of the noun phrase as
a whole. These tend to be blocked together with the head
noun: The MAN who is over there / is WATCHING us, for
example, tells which man the hearer is to attach watching to.
Other postnominal qualifiers, however, assume that the hearer
already knows what the phrase refers to. They add incidental

information, and so are appropriately blocked by themselves:
The MAN / who is over THERE / is WATCHING us. A similar
pattern of difference between defining the head of a noun
phrase and throwing in additional details about it for the
hearer's interest is seen in The CHECKS which were ready
yesterday / are still on the DESK versus The CHECKS / which
were ready YESTERDAY/ are still on the DESK. When the second
kind of information block (the so-called nonrestrictive
relative pattern) is used, the pitch of its intonation
contour tends to echo that of the contour that ends on the
head word.

Information blocking can also be used to clarify
just how far certain adjuncts carry. In general they tend
to apply to only one information block. If the adjunct is
marked off in a block of its own, then it applies to the
block next to it. If it is included within a larger block,
then it applies within that block. For example, in On
WEDNESDAY / Uncle GEORGE arrived / and we had a PICNIC the
sentence initial adjunct is blocked by itself, and so
applies to Uncle George's arrival. What day the picnic
took place is anybody's guess; it could even have been on
Thursday, because the adjunct does not apply beyond the block
next to it. A similar effect can be gotten by putting the
adjunct inside the same block as the clause it modifies:
On Wednesday Uncle GEORGE arrived / and we had a PICNIC.

On the other hand, the adjunct can be applied to
both clauses by putting them into a single information block.
If we say On WEDNESDAY / Uncle George arrived and we had a
PICNIC, or even On Wednesday Uncle George arrived and we had
a PICNIC with everything in one block, then the picnic could
only have been held on Wednesday because the adjunct is tied
to both of the clauses in the block.

There are final adjuncts that work in the same way
as the initial adjuncts, but in the opposite direction.
Only, neither, and too imply a constituent prior to the one
to which they are bound by the information blocking. They
got there late and missed the bus TOO implies something in
the situation or earlier in the discourse to which the current
misfortunes are being added; so does They got there late and
missed the BUS / TOO. If each clause is blocked separately,
however, then the first one is the earlier element that
too looks for; there is no need to scan farther for it:
They got there LATE / and missed the bus TOO, or the equiva-
lent with too as a separate block, They got there LATE /
and missed the BUS / TOO.

2. INFORMATION CENTERS

Each information block contains at least one center.
The center is that part of the block in which new informa-
tion is concentrated. The rest of the block contains more
predictable material. In English the center of an informa-
tion block is identified by intonational prominence, just
as the extent of an information block is identified by
intonational boundaries. In The MART / is having a SALE
today, Mart and sale are the centers of their respective
information blocks, and communicate the least predictable
information within each block.

Just as the quantity of information that is contained
in one block is decided on by the speaker, so the placement
of the center is under his control. He has the option of
designating the 'part of the message block the speaker
wishes to be interpreted as informative', in Halliday's
words; he can direct the hearer's evaluation of what is to

be taken as new and what as given. He does not, on the other
hand, exercise any choice over whether the block will have
a center or not, any more than in English he exercises a
choice over whether an independent verb will have a tense
or not. Something in the block has to be picked out as its
center, if only in relative terms.

The decision about what is to be considered relatively
new is independent of the constituent structure of the block.
It is also independent of the underlying content structure
which the constituency reflects. Perhaps we all played
games with center placement in childhood, like repeating

> MY puppy is black.
> My PUPPY is black.
> My puppy IS black.
> My puppy is BLACK.

All four have the same underlying content, but they differ
as to the speaker's decision about informativeness. All
are natural in the right contexts.

New information corresponds to the information that
could be given as the answer to some question. For this
reason questions are useful tools in tracking down information
centers. The game is to find a question to which a particular information block is the natural answer.

The search for questions is complicated by a further
characteristic of given information, however: answers often
leave out part or all of the presupposing statement that is
behind the question. Whose puppy is black? for example, can
elicit MY puppy is black as an answer under some circumstances, but the familiar principle of deletion recoverability--
that anything that can be supplied from the context does not
have to be repeated--leads more often to MINE as the answer.

Intonation centers that reflect the answer to a question illustrate center assignment on a cumulative basis. The information is new with reference to the text and the situation. On FRIDAY / CAROL came / and she TOLD me / she wanted to get a JOB illustrates singling out the center of each block by testing everything against the previous text (so that she is never a center but Carol is on her first appearance) and against the situation (so that Friday fits at an unpredictable distance in time from the day of the speech situation).

Other intonation centers, on the other hand, are placed by contrast. They reflect a guess by the speaker that the hearer might understand something wrongly if he applies the normal rules to it. Contrastive center placement can apply to anything at all, while cumulative placement is restricted almost completely to content words, for reasons we will look into later. I saw HIM illustrates an information center placed contrastively on an anaphoric word which would never be a center in the cumulative sense. What the contrastive placement means is "be careful--the reference you would understand by ordinary backtracking is the wrong one for this use of him; so look for the next most likely referent instead." Contrastive stress on the modal, as in My puppy IS black, means "I think you misunderstood an earlier assertion of mine on its positive-negative dimension". It could also be used to clarify a misunderstanding about tense, contrasting with was.

An information block may have more than one center under certain conditions. In English the secondary center always follows the primary one as a second point of intonational prominence within the same contour. Usually the second intonational nucleus is not as high in pitch as the first: They have a CLASS on WEDNESDAYS.

Secondary information centers are usually used to communicate information that is relatively unpredictable, yet is dependent in some way on the primary center. In We'll BE there if we CAN the secondary center CAN involves a contingency. In They cost LOTS you KNOW the secondary center is a confirmatory tag on the main part of the information block. In the clause final adjunct of He wrote the LETTER on FRIDAY the time designation is new, but not as importantly new as the primary center. Each of these secondary centers could, of course, be uttered as a separate block: We'll BE there / if we CAN and so forth. The speaker has the option of separating them; but if he chooses to combine them, he is making the second one definitely subordinate in its impact on the hearer.

Another kind of secondary information center could be thought of as halfway between being new by cumulation and being new by contrast. Halliday characterizes this as given information that is 'to be noted'. It appears regularly in thematic tags (22.4) in which the tag consists of given information, as in He fixed it FAST did GEORGE.

There is a special kind of secondary information center in which the pitch is not only lower than that of the primary center, but distinctly lower than the general pitch of the rest of the block. In our simplified notation for those parts of intonation that reflect the information blocking system we can symbolize this by a falling arrow before the word: GEORGE doesn't ↘ THINK so. This deviation of the pitch line to the low side of normal seems to be used for adding a negative evaluation by the speaker (Donald Hayes, personal communication). It has a special affinity for evaluative words, though it may be used to cast a bad light on something relatively innocuous. In He REALLY had

a BAD night only the lowered secondary center fits; try
the same statement with GOOD in place of ⟍ BAD. On the
other hand, The STEAK was ⟍ OKAY sounds grudging rather
than complimentary.

One wonders, accordingly, about the airline steward-
ess who announces we HOPE you've ⟍ ENJOYED / your FLIGHT
with us / and we HOPE to ⟍ SEE you again / SOON / on
GAMMA ⟍ AIRLINES.... Is it because she was trained to
use a singsong chant over the public address system, or is
this her only chance to express what she thinks of the
passengers? Clearly this class of information structures
requires further research.

Epithets that are tagged on the end of a clause
frequently appear as lowered secondary centers. This is in
keeping with their mildly negative meaning: He SAID he'd
get here the ⟍ SO-AND-SO.

Oksapmin of Papua New Guinea (M. Lawrence ms) has
a cohesive structure that handles given and new information
in a slightly different way. As in English, the basic
information block corresponds to the clause in the unmarked
case. Centers, however, come in two varieties. Some centers
involve information that is new in the technical sense; of
being relatively unpredictable in terms of the text or situa-
tion. Others are new in that sense; but in addition the
speaker considers it appropriate to call the hearer's
attention to that newness. Thus in Oksapmin information
centers could be thought of as unmarked or marked in terms
of how their newness is presented.

The kind of center that is involved in Oksapmin has
direct grammatical consequences. Unmarked centers have an

inflection pattern called medial on the main verb of the clause.
With medial inflection no information is given about tense
and mode; this is held off until the next marked center
comes along. At the marked center, where the speaker is
telling the hearer that the new information he is giving
him is not only new but worth singling out as new, he employs
a final inflection pattern. This expresses the tense and
mode that apply to the entire string of medial clauses
ahead of the final one as well as to the final clause itself.
In effect, the final inflection is what indicates the rela-
tionship between the speaker and what he is saying, while
the medial inflection puts off that question.

Up to now our discussion of centers has been concerned
with the number of centers per block. We have considered
the fact that contrastively placed centers can go on any-
thing in the block.[3] Now it remains to look into where the

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[3]Contrastive centers can even fit on fragments of
words: The engineers designed this pump to EXpel rather
than to IMpel.

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center comes in the block when it is cumulative.

This is best explained by working up to it through
a series of approximations. The first level of approxima-
tion is the observation that unmarked centers usually fall
on the last word of a block. The stressed syllable of that
word is the one with which the intonational nucleus coincides:
Here are some BOOKS. The fact that unmarked centers do not
always come on the last word will give rise to another round
of approximation later. For now let us concentrate on the
cases in which the unmarked center is last.

One consequence is the generally valid observation
that given information is presented before new information.
It lays the groundwork for it, so to speak.

The given-new sequence, however, has a built in
point of ambiguity. The longer the block, the more possible
division points there are between where the given informa-
tion leaves off and the new part begins. In other words,
we do not know how much the center contains; all we know
is where it ends.[4]

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[4]Chafe's rules for assigning new status to the
elements of a sentence (1970a) miss this point, which
really requires discourse conditions on the assignment of
new.

There are cases where everything in the informa-
tion block is new; the center carries all the way back.
Blocks of this type are characteristic of the beginning of
discourses,[5] especially discourses like telephone conversa-

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[5]C. C. Fries (1952) took most of his data from the
initial sentences of telephone conversations. He found
that they showed a greater variety of structure than later
sentences. I would guess that the later sentences make
heavy use of cohesive mechanisms, but beginning sentences
have to rely on the full expression of content in the
absence of given information.

---

tions and narrations in which situational factors are at a
minimum: Two MEN / were walking down a ROAD / THREE MILES /
from BIRMINGHAM contains a series of information blocks in
which all the information is new. Blocks of this kind are .

typically elicited by nonspecific questions like What happened?

Halliday (1967b) suggests that in some cases information blocks that contain all or nearly all new information may be phonologically distinguished from blocks that begin with given information, provided the whole block is short enough. In English phonology, intonation contours consist of one or more feet or rhythmic units. Each unit consists of one to five syllables, and in the main is coextensive with a word. Each foot has one stressed syllable; the rest are unstressed. Halliday notes that some syllables have the rhythm of unstressed syllables, but the stressed syllable they should go with is nowhere to be found. Its place is taken by a pause, the timing of which is equivalent to the timing of a foot nucleus in ordinary speech rhythm. A foot can thus consist either of a stressed syllable as nucleus with peripheral unstressed syllables, or it can consist of a silent stress as nucleus with peripheral unstressed syllables. Using an acute accent for nuclei, including the accent by itself for silent stress, and writing a plus sign to indicate rhythmic foot boundaries, we could show the rhythmic substructure of an all new information block as ' He + writes + NOVELS, with a complete foot as well as one with silent stress in the part before the center.

For a given-new information block, the information center begins somewhere in the middle of the block. It is the last constituent, figuring constituency far enough down the tree of surface grammar that it does not embrace the entire block. This kind of information structure is elicited by specific questions that assert while they query: What do you have in that SACK? asserts you have something in that sack, so that in the answer anything that entered into the

assertion will be given information, and only the contents
of the sack will be new: I have an ORANGE. Halliday suggests
further that for given-new information blocks that are short
enough to permit it, the part preceding the center may not
contain any full feet, but only one with silent stress:
´ I nave + an ORANGE. In answer to a specific question
like Whát does + he WRITE? the answer is likely to be
phonologically marked as given-new by its rhythm: ´ He
writes + NOVELS. This is in contrast with the block of
nearly all new information elicited by a general question
like ´ What does + he DO?, which is more appropriately
answered ´ He + writes + NOVELS.

Keeping to the approximation that the unmarked center
of an information block falls on the last word of the
block, it follows that any other placement of the center is
marked, implying a special reason for putting it elsewhere
than at the end. ALL the reports have to be in by tomorrow
illustrates a marked placement of the center. It is fre-
quently the first constituent of the block that is marked,
especially in cases where the center coincides with a marked
theme. As before, placement of the center may be by
cumulation or by contrast.

The same ambiguity appears with marked information
centers as we had for unmarked centers; namely, we are often
uncertain whether the center covers a larger or a smaller
constituent. All we know is that the intonational prominence
comes on the last word of some constituent. For example,
there are two informational readings for The six kids on the
CORNER might have seen them. The first reading takes the
entire noun phrase constituent the six kids on the corner
as the new part. It could, for example, imply a contrast
with the five adults down the block. The second reading,

however, takes only the prepositional qualifier <u>on the corner</u>
as new information. 'It could imply a contrast with <u>on the</u>
<u>balcony</u>.

On the other hand, a center like the one in <u>I've</u>
<u>eaten BETTER pizzas</u> is unambiguous because the only consti-
tuent that ends with <u>better</u> is the word itself.

Marked intonation centers can thus cover rather
large constituents or single words. They can also single
out fragments of words: <u>The effect you expect should be</u>
<u>an IMplosion, not an EXplosion</u>.

.If we use the question-answer approach to localizing
new information, we find that marked information centers
are appropriate in the answers to information questions,
and correspond to the WH- word:
- Q. Who wrote the NOTE?
- A. BILL wrote the note.
- Q. What did Bill do about the NOTE?
- A. Bill WROTE the note.
- Q. What did Bill WRITE?
- A. Bill wrote the NOTE.

The last answer is also appropriate for the less specific
questions that elicit unmarked centers in their answers:
- A. What did Bill DO?
- A. What HAPPENED?

We began with the principle that unmarked information
centers fall on the last grammatical constituent of an
information block, but recognized that that statement is
only an approximation to the real principle. The place-
ment of information centers is skewed because there are
some kinds of constituents that are incapable of being

cumulatively new (although they can, of course, be new in the contrastive sense). When these elements come last in an information-block the unmarked center comes on the first constituent ahead of them.

The most obvious class of items that cannot be informationally new are anaphoric elements. These include both words that point to the earlier part of the discourse and words that point to standard features of the situation of speaking like time, the speaker and hearer, and objects that are under their immediate attention.

The elements that are anaphoric by reference to the text (Halliday uses the word 'substitution' for this relation) include relative markers, demonstratives, pronouns and quasi-pronominal nouns, and other proforms. Relative markers like whom in It's the man for whom you ASKED are already defined by the head noun, therefore are always anaphoric. They come at the end of information blocks only when the blocks are very short. Demonstratives refer back: I just SAID that. (When demonstratives are used cataphorically to refer to something that is yet to be explained, they are not anaphoric and so are quite likely to be information centers.) Anaphoric pronouns like We already SAW him are common. Inclusive nouns behave in much the same way as pronouns when they are used anaphorically: He drives a BEETLE / but his wife prefers a BIGGER car is anaphoric provided one knows that a Beetle is a kind of car. To make car the information center would constitute either a joke or a confession of ignorance. There are other pro- forms like so that point back anaphorically to parts of the text other than designations for objects: When will he LEAVE? I think he's already DONE so.

Other elements are anaphoric in the sense that they refer to things in the situation of speaking that do not need to be pointed out. (Halliday's term for this is 'reference'.) Interrogatives may operate this way: Which IS it? is situationally anaphoric when a collection of objects is in view, as in the case of a rental car customer who enters the parking lot to pick up his vehicle. Demonstratives that refer to something already under attention are anaphoric in the same sense: He won't LIKE that one, for example, fits the situation of a woman shopping for a necktie for her husband for Christmas when the salesman shows her a particularly garish necktie. Pronouns do not have to be defined textually to be anaphoric; consider a scene in which one golfer walks up to another who is fuming at the tee and says, Did you MISS it?, referring obviously to the ball that is still sitting there. Quasi-pronominal nouns can also be situationally anaphoric, as when one person turns to another while inspecting the pits before the Grand Prix race and says, Looks like a rather FAST car. Adverbs that take their meaning directly from the situation of speaking are anaphoric and therefore not eligible to be made into unmarked information centers: Bill wrote the NOTE this morning, I wish they'd COME now, Let's have a little QUIET here.

There is also a set of forms that are not in the running to be unmarked information centers even though they are not in any sense anaphoric. These are members of small closed classes of function words like modals, prepositions, and conjunctions. Even though the information in modals, for example, may be new, the modal is not treated as an unmarked information center: Forgot his WALLET, did he? Prepositions frequently specify a location or direction

more precisely than the general role relationships that
form the framework for their use; but that does not qualify
them as centers: What tree did you LEAVE it under?.
Conjunctions like and, or, and but are rarely centers,
though scope indicators like both, either, and neither may
be treated as new (and may be called for as equivalent to
making an information center out of their conjunction):
BOTH Peter and Julie came.

        In contrast, some words carry new information more
often than not. Whenever a situational reference is being
defined (as opposed to its being taken as obvious and
therefore given) the deictic word referring to the situation
is new and is the prime candidate to be an information
center: THAT'S the one I want (pointing to it), HERE is
where we camp tonight (said while standing on the spot).
Interrogatives may be treated as centers: HOW is it done?
highlights the fact that the presupposition of the question,
it is done, is accepted, whereas How is it DONE? treats the
whole block as new.

        Cataphorically defined demonstratives have reference
to something the hearer has not been told yet; they are new
in the sense of promising that information will be given
later that is to be treated as a unity: THIS is what we
demand / an IMMEDIATE CESSATION / ...

        Echo questions refer to something that has been
asked or answered already. The interrogative element in
them is treated as the center; but they are distinguished
from ordinary intonation blocks by their continued high
pitch after the center. They are questions about an earlier
piece of the discourse, and imply that the one who asks

should know the information but missed it: WHO did it?
(I know you already said who did it, but I missed it), WHAT
time did you say it was?

        Contrastive information centers, as we have already
seen, may locate new information anywhere in a block. Their
meaning, however, is of a special kind. It says, 'the
interpretation of this element is not what I think you
expect it to be'. Thus a modal element may be a contrastive
center in they WILL go (even if you say they will not, I
assert my positive modal against your negative one). They
may point to a reference that is not the ordinary reading
for anaphora: THAT'S what I said (not the other thing that
I think you are referring to). The switch in reference is
seen plainly in the following example (Langendoen 1970):
        JOHN / tried to shout to BILL, but
        he misunderSTOOD him.
            (Bill misunderstood John)
        HE misunderstood HIM.
            (John misunderstood Bill)

        Finally, elements that are anaphoric by situational
reference may be made into contrastive centers in cases
where more than one possible referent is present in the
situation: THAT'S the one is appropriate to go along with
pointing to single out one of several possible referents for
that.

        We can return now to the formulation of how infor-
mation centers are indicated in English by intonation.
Recognizing that some elements inherently go with given
information, we can say first that cumulatively new infor-
mation is contained in the constituent on whose final accent-
able foot the nucleus falls. This leaves us with a poten-
tial ambiguity in that, since constituents may be embedded

one within another, we may not know whether we are dealing
with, say, a whole sentence or a single word. We also
must stipulate that normally, accentable feet exclude ana-
phoric items and small closed system items. If on the other
hand, the information is new in the contrastive sense, the
center may fall on anything.

3. OVERLAYS

        In working on several unrelated languages I became
aware of a pattern of handling new information that does not
fit Halliday's given-new paradigm too well (Grimes ms).
This pattern was first called to my attention by educators
and others who found that speakers of some languages insisted
on what to the educators was a prolix style that involved
going in multiple cycles, each of which said approximately the
same thing.

        On looking further it became apparent that a tightly
structured rhetorical pattern was involved, but one that
was constructed on different lines than the patterns with
which I was more familiar. One could say, in an approxima-
tion to Halliday's terms, that these structures (which I
have labeled overlays) distinguish three kinds of informa-
tion: given, new, and highlighted. So far all the overlay
patterns I have seen have been related to event sequences.

        The overlay technique involves putting together two
or more planes, each of which constitutes a narration of
the same sequence of events. The first plane consists
largely of new information. The second plane, and others
that follow it, begin the sequence over each time. Further-
more, they consist partly of new information that is being

given for the first time in that plane, partly of given
information such as that which is referred to anaphorically,
and partly of information that is being repeated piecemeal
from an earlier plane. This repeated information has a
special status; it is the highlighted information that ties
the whole overlay together. Informationally it is the back-
bone of the whole structure. One could think of the high-
lighted information that carries through from plane to plane
as information that is being made to stand out by being
placed in slightly different environments, just as a stereo-
scopic visual image makes the foreground objects stand out
by relating them to slightly different backgrounds.

For example, in a Bororo text reported by Thomas
H. Crowell (ms) we could list the actual sequence of events
that are narrated as follows:

      A A calf and its mother arrive in Colonia.

      B I arrive in Colonia.

      C My companions run to me.

      D The Brazilians, the Bororos, and my companions
           say the calf is mauled and I should go to it.

      E I say the calf will not die.

      F I go to the calf.

      G I see the calf lying beside the machine and the
           mother standing nearby.

      H The calf dies.

If we arranged the events along the time line,
following Litteral's idea of an index, they would come out
in order ABCDEFGH as listed. They are not, however, told in
that order. The planes of the overlay are

      1 B D G

      2 D F G

      3 C D F G H

      4 A E H

We notice first that within each plane the action
proceeds in time sequence, while between planes it backs
up. The first three planes are tied together by D G, the
last two by H--in other words, 'in the first part of the
overlay the speaker is highlighting D G (between 1 and 2),
then expanding the highlighted part to D F G (between 2 and
3), then shifting to H (between 3 and 4).

Ivan Lowe (personal communication) has pointed out
that when we extrapolate from the relationships that are
present in the actual telling, we find a surprising consis-
tency. This consistency can be seen by representing the
text in topological form as follows.[6] Each of the four

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[6]A topology, is one way of representing relationships
that may or may not fit into the tree structures that
linguists are most familiar with. See the references to
topology in Chapter 3.

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tellings of the story is taken as a subset of the universal
set ABCDEFGH that describes the total series of events.
These four tellings are considered open sets in the topology.
The rest of the topology is filled in according to the follow-
ing three principles: (1) The universal set and its
complement, the null set ($\emptyset$), are in the topology. (2) For
any two open sets in the topology, their union is also an
open set in the topology. The union of two sets is a set
that contains every element that occurs in either of the two;
the union of DFG and BDG is BDFG. (3) For any two open
sets in the topology, their intersection is also an open
set in the topology. The intersection of two sets is a
set that contains only elements that occur in both of the
intersecting sets; the intersection of BFG and BDG is DG.

The nineteen open sets in the topology all fit this
picture. Listed by the number of elements in them, they
are (underlining the original sets)

    $\emptyset$

    H

    DG

    AEH DGH DFG BDG

    BDGH DFGH BDFG

    ADEGH BDFGH CDFGH

    ADEFGH ABDEGH BCDFGH

    ACDEFGH ABDEFGH

    ABCDEFGH[7]

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[7]We can observe that this topology has a base con-
sisting of the four generating sets together with $\emptyset$, H, and
DG. Every set in the topology can be formed by the union
of sets in the base.

Given the four generating sets of the topology,
there are exactly nineteen open sets in the topology. On
the other hand, there would be a possibility of having a
topology that includes all subsets of the universal set
if we had different generating sets. The maximum number of
sets in a topology on eight elements is $2^8 = 256$ sets; a
topology that contained all of them would be called the
discrete topology. How is it that less than a tenth of the
sets that would be present in the discrete topology actually
turn up in the topology related to this discourse?

If we read back the open sets in the topology as
possible tellings of the tale or planes of an overlay, we
see that each one is a valid plane. On the other hand, sets

that are not in the topology (such as AB or CH, for example)
do not fit the picture; they are out of joint as expressions
of the story. (The relevance of a telling becomes even
clearer if we look at the context of the story. In this
case the narrator was documenting a request for hunting
dogs to help control the depredations of jaguars, first by
establishing himself as an attested eyewitness using the DG
complex, and second as having suffered a personal loss
using the H complex.) The topology thus expresses a kind
of internal coherence that is far from a random selection
of possible tellings. What the nature of this coherence is
needs to be explored in detail; the topology simply gives
us a means of recognizing that it is there.[8]   In languages

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[8]There may be other valid tellings of the tale that
are not in the topology but lie close to it in the sense
that the generating sets that would have to be added would
intersect so thoroughly with the existing topology that the
total number of sets would not increase by very much. We
can thus consider three distinct topological representa-
tions of a narrative: (1) The topology derived from a
telling without overlay, which would consist of only the
null set and the universal set; (2) the topology derived
from an overlay, as presented here, which has as its limit-
ing case (3) the topology derived from all possible overlays,
which would contain all possible relevant planes and no
irrelevant ones.

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that do not make use of overlay we have no way of approxi-
mating this kind of structure.

        Some languages make little or do use of the overlay
mechanism. Formal English does not use it, though I have

detected snatches of it in the kind of oral discourse that
we characterize informally as going 'round and round'.
I have also picked it up in conversational Mexican Spanish--
always when I have no tape recorder with me. Alan Healey
has suggested that portions of the Bible like Judges 20:
29-48 are overlays.

In English we do have patterns of summarizing and
abstracting that look superficially like overlays. In an
initial or final summary or an abstract, however, the only
information that appears is what is also in the body of
the text. No new information can be introduced. In topo-
logical terms the body of the text would be identical with
the universal set. In all likelihood the only other sets
in the topology would be the summaries or abstracts themselves,
since their unions and intersections would not yield any
new sets.

The difference between an overlay and a summary is
thus that in an overlay each plane introduces some new
information at the same time that it highlights information
that each new plane after the first has in common with
earlier planes. There is no plane that acts like the body
of a text that includes a summary in being equal to the
universal set. Instead the universal set of an overlaid
text is built up by union of the planes.

4. INFORMATION RATE

We have already considered the rate of introduction
of new information as a factor in determining the length
of information blocks. A high rate tends to go with many
short information blocks. It also seems to go with a gen-

erally low reliance on anaphoric means of maintaining
reference. In other words, when the information rate is
high, speakers tend to rename and reintroduce things rather
than to employ complex means of keeping track of who did
what.

On the other hand, some languages seem to favor a
more leisurely rate of information introduction. Many of
the languages of New Guinea, for example, use techniques
like linkage (20.3, Thurman ms) and overlay in a way that
keeps the information rate generally low. They tend at the
same time to exploit the mechanisms of anaphora, and to
permit fairly long information blocks. Saramaccan (Grimes
and Glock 1970) seems to have a fairly low average rate of
information introduction, and it is possible that casual
styles in most languages show this kind of increased
redundancy when compared with more formal or business-like
styles.

It should prove instructive to analyze the effect
of writing on languages whose normal information rate is
relatively low. Although good writing does not require that
the reader scan back to pick up what he is not given redun-
dantly, the nature of the artifact freezes the preceding
context so that it is there if the reader wants to go back
to it.

In writing for new literates or in training writers
to produce material for new literates, it might be worth
considerable effort to try to match information blocks with
eye spans, so that each chunk that is read (once the reader
gets past the syllable-by-syllable or word-by-word barrier)
is informationally complete.

CHAPTER TWENTY

IDENTIFICATION

[Linguistic reference is expressed by various forms
of identification at various degrees of explicitness. This
chapter introduces the concept of the referential field,
which is related to perception on the psychological side and
to quantification and definiteness on the linguistic side.
Identification is related to cohesive structure both in
regard to forms of substitution, anaphoric and cataphoric,
and in regard to viewpoint. Time as a factor in identifica-
tion is developed from the initial discussion in Chapter 3.]

CHAPTER TWENTY-ONE

STAGING

Every clause, sentence, paragraph, episode, and
discourse is organized around a particular element as its
point of departure. It is as though the speaker had a
strategy of presenting what he wants to say from a particular
perspective. I find it convenient to think in terms of how
various units are staged for the hearer's benefit. This
staging is at least partially independent of both content
structure and cohesive structure. It operates at many
levels of text organization.

In choosing a term like 'staging' I am trying to
break out of a terminological bind. We have the words 'topic',
'focus', 'theme', and 'emphasis' appearing freely in the
linguistic literature, but with such broad ranges of overlap
and confusion that they are nearly useless. I hope not to
add to the confusion, but rather to help map a way through
the phenomena we are trying to describe. My choice of terms
like 'information block' and 'center' in Chapter 19 fits
in with this attempt, since the words we are concerned with
have also been used for the phenomena of cohesion.

In the area of staging I have found it useful to
continue the general strategy of distinguishing semantic
choices from the phenomena involved in communicating those
choices. For example, in discussing content structure I
have distinguished predicates, which express content in an

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abstract way, from nouns and verbs that are used to·express
that content.   In cohesive structure I have distinguished
information blocks and centers from the intonational bound-
aries and nuclei which in English are used to communicate
the extent of the blocks 'and something about the placement
of the centers.

        In discussing staging I wish to maintain a parallel
distinction between the semantic choice of a theme or
point of departure on the one hand, and the designation of
a constituent in the grammar as the topic by means of appro-
priate signalling devices. In my dog has fleas, for example,
there is a choice to treat the Patient as theme. This is
implemented by putting it first, which makes it the topic.
If the thematic choice fell on fleas instead, the same
topicalizing mechanism would be invoked, giving fleas my
dog has.

        It is evident that thematic choice is independent
of content structure; both the examples in the preceding
paragraph have the same predicates and arguments. Thematic
choice is also independent of the cohesive structure.
Although a marked topic (i.e., a topic that is not the sub-
ject in a declarative sentence) is frequently new as well,
as in FLEAS my dog has, it can also be given, as in

        A: I wonder where I can get some fleas for my
            biology experiment?
        B: Huh! Fleas my DOG has.

1. THEME AND MODALITY

        English uses word order in several ways. This
makes it sometimes difficult to untangle all the factors

that are involved in a particular ordering. Because the
staging of a clause and its mode are two of the main factors,
we will begin by attempting to separate out mode from clause
topicalization.

As in cohesion, so also in staging it makes sense
to talk about unmarked and marked patterns of staging. In
English the unmarked theme in clauses[1] depends on the mode.

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[1]I speak of clauses here rather than sentences
because, for complex sentences at least, there is a separate
set of thematic options. I'll go if they invite me and if
they invite me I'll go are thematically different sentences,
each clause of which is thematically unmarked.

The content structure that corresponds to a clause
contains at least one lexical predicate and its role related
arguments. The consolidation transformation (Chapter 13)
gives a clause a single dominating predicate, which may be
semantically complex, and retains role related arguments,
though it may delete some and reassign others. There is
then a mapping rule that assigns one of the arguments to
the subject category and others to other surface functions.
This rule is part of the staging system; it interacts with
the selection of mode to give unmarked word order, and has
other semantic inputs that give distinctions of voice.

Mode in English is expressed by the way the subject,
selected on this basis, is related to the modal elements
largely independently of the rest of the clause. In the
declarative mode the subject precedes the modal element,
which may be carried by the main verb as in Max ate the

apple or by an auxiliary as in Max hasn't eaten the apple.
The subject is the unmarked topic. In independent clauses
a subject must be present; so strong is this requirement
that English uses dummy subjects where none is supplied by
the mapping from the role system: It's raining, there is
a possibility that we will leave a week early. In terms of
the modal system, the declarative is without doubt the
unmarked mode.

   In the polar interrogative mode the modal element
is itself the unmarked topic, and the subject follows it.
In contemporary English the topicalization of the modal
requires the use of an auxiliary, as in Did Max eat the apple?
(In earlier English the main verb could have been moved
as a carrier for the modal: Ate Max the apple?) The rest
of the clause following the modal gives the area of uncer-
tainty that the modal questions, and implies a disjunction.
If the disjunction is not spelled out, it is taken to be
between a positive and a negative value: Either Max ate
the apple or Max did not eat the apple; tell me which. A
disjunction that is not on yes-no lines must be spelled
out. Either Max ate the apple or Max ate the orange; tell
me which, with its less redundant form Did Max eat the apple,
or the orange?

   The nonpolar interrogative has as its topic a WH
or question element. The rest of the clause states the
presuppositions or background assumptions that will be
considered acceptable in an answer. Who ate an apple?, for
example, sets as grounds for answering the agreement that
somebody ate an apple. The presuppositions even extend
into the word that contains the WH element, since who
implies that a person ate the apple and what implies that
the eater was not a person.

Nonpolar interrogatives like who, what, when, where, why, and how focus the answer on clause and sentence constituents. Which and how many, on the other hand, point to the determiner element of some noun phrase within a clause: Which student did the best work this semester? Nonpolar interrogatives of either kind can be raised out of embedded clauses: Who did you say I ought to send the letter to? Prepositional phrases with nonpolar interrogatives may also function as topic in relation to the modal; To which senator did you say I ought to send the letter?

The verb itself is unmarked topic in the imperative mode, and the subject is deleted as predictable from the mode: Eat an apple today.

Dependent clauses have their introducer word as unmarked theme. Following it, however, a few thematic options (though no mode-related ones) are still possible, enabling things like I'll talk to him because me he respects.

Whenever anything is put first in the clause other than the element that normally signals the mode, it constitutes a marked topic in English. This kind of thematic marking is most common in the declarative mode, which is the unmarked member of that set; in other modes, the unmarked topic is less frequently preceded by anything: This picture I want for the living room (declarative), Max did he eat an apple? (polar interrogative), The carpenters what did they finish today? (nonpolar interrogative), You guys clear out. (imperative), Me if I get there I'll phone you. (dependent). Note that where the subject is a marked topic, a pronoun is left behind in its regular position to prevent loss of the modal information that depends on the order of subject and finite verb form.

Clearly the marking of thematization is related to
a semantic factor of prominence. It is as though in a play
directions were given to the spotlight handler to single
out a particular individual or an action, or one actor were
placed close to the audience and another off to the side.
In fact, staging metaphors appear to be highly appropriate
for the marked varieties of a whole range of linguistic
phenomena that have a long history of being hard to handle.

One such area is the semantic relations that I have
spoken of in connection with proposition consolidation (11.2).
For example, both the similarity in meaning and the difference
in form between used pliers to bend the wire and we bent the
wire with pliers can be expressed by saying that in the first
example the staging involves a prominence factor on the
abstract instrumental predicate. This prominence of staging
blocks the consolidation transformation that normally yields
Instrument as a role as in the second example.[2]

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[2]If prominence explains failure to consolidate, this
moves the area of difficulty over to characterizing the
difference between we used pliers to bend the wire, with
pliers we bent the wire, and pliers we bent the wire with.
In the first of these prominence attaches to the predicate
underlying use, and in the last to pliers; but in the second
either it goes with the entire proposition (use (A we)
(P pliers) G), or there is a better explanation yet to be
found that will also show the semantic similarity shared
by all these sentences.

Another area where staging seems to be at work is
in the decision about what to embed and what to make gram-

matically independent. The propositions (man (E x)),
(enter (A x) (R y)), and (store (E y)) combine in more
than one way: The man entered the store, the store was
where the man entered, enter the store the man did.[3] In

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[3]There are also propositions related to the speech
situation and cohesion that influence the form of these
examples: (know (X you) (P x)), (know (X you) (P y)),
(inform (A I) (G you)), (precede (P enter...) (R now)), and
possibly others.

---

relation to other propositions we might also have the man
who entered the store, the store's entry by the man,
entering, and a number of other forms. Given a collection
of propositions that are interconnected by shared references,
the speaker's decision about what is, so to speak, front and
center on the stage, what is present in a secondary way,
and what is unimportant enough that it need not even be
mentioned, is a thematic decision. Looked at in this light,
we see that staging affects much more than topicalization.

Quite a few languages use sentence initial adjunct
clauses as part of their staging. Thurman (ms) discusses
the general process of linkage, in which a clause that
describes an event is repeated to provide the point of de-
parture for the next event. The repetition may be verbatim,
or it may take a reduced or dependent form. Like asyndeton
or absence of a conjunction in Greek, the lack of a linking
clause may signal a thematic shift. A typical example of
linkage is cited by Ronald Lewis from Sanio-Hiowe of Papua
New Guinea (ms) Krismasi ta saro uriye. Krismasi ta saro
uriye, teitiye sosu a'i masta nomo eimawiye pranteisin.
Nomo eimawiye, nomo ta apo inawe. 'We were here for one
Christmas. We were here for one Christmas; then the boss
sent us to the plantation. He sent us; we went to it.'
Stout and Thomson (1971) cite entire paragraphs repeated

as linkages in Kayapo of Brazil.

In one sense a linkage is the topic of the sentence it introduces; yet the main clause of the sentence may have its own internal topic. I am not sure whether this is parallel to dependent clauses in English, where the relator word is the unmarked topic but secondary thematic options are also available within the clause, or whether on the other hand the sentence topic and the clause topic are independent.

Nonanaphoric connectives like and and but appear to be athematic even though they are initial. They are followed by the full range of thematic possibilities for clauses, which establishes them as outside the system. Some discourse level connectives like first, ... second, ... may go with chunks of speech much larger than clauses, but they also appear to be athematic for the same reason.

In between athematic elements like these and fully thematic things like object topicalization, there seems to be a range of semithematic introducers that restrict some of the possibilities of what can be topicalized after them but leave others open. We have already considered subordinating conjunctions like although and because in this sense. Linkage clauses appear to impose mild restrictions in some languages. Modally oriented introducers like perhaps have a similar effect.

2. THEME AND COHESIVE STRUCTURE

The best way to show the independence of theme from cohesion is by displaying a series of paradigms adapted from Halliday (1967b). Each paradigm gives one mode: declarative,

polar interrogative, and non-polar interrogative with a WH-word as subject. The first block in each paradigm gives the unmarked theme for that mode, and within that thematization gives the corresponding unmarked information center and subject, verb, object, modal, or pronoun as marked information centers. All examples consist of a single clause that is unmarked with respect to information blocking; that is, one clause, one block.

    Unmarked theme = subject
Unmarked center \John saw the PLAY.
Marked center: S JOHN saw the play.
Marked center: V John SAW the play.
Marked center: O ambiguous with unmarked center.

    Marked theme = verb
Unmarked center   Saw the play did JOHN.
Marked center: V SAW the play did John.
Marked center: O Saw the PLAY did John.
Marked center: S ambiguous with unmarked center.

    Marked theme = object
Unmarked center   The play John SAW.
Marked center: S The play JOHN saw.
Marked center: O The PLAY John saw.
Marked center: V ambiguous with unmarked center.

Figure 21.1. Staging and cohesion, declarative mode.

Unmarked theme = modal.

Unmarked center   Did John see the PLAY?
Marked center: S   Did JOHN see the play?
Marked center: V   Did John SEE the play?
Marked center: M   DID John see the play?
Marked center: O ambiguous with unmarked center.

Marked theme = subject

Unmarked center   John did he see the PLAY?
Marked center: S   JOHN did he see the play?
Marked center: V   John did he SEE the play?
Marked center: M   John DID he see the play?
Marked center: Pr John did HE see the play?
       (note that the center is a residue of topicalization.)
Marked center: O ambiguous with unmarked center.

Marked theme = verb

Unmarked center   Saw the play did JOHN?
Marked center: V   SAW the play did John?
Marked center: O   Saw the PLAY did John?
Marked center: S ambiguous with unmarked center.

Marked theme = object

Unmarked center   The play did John SEE?
Marked center: S   The play did JOHN see?
Marked center: O   The PLAY did John see?
Marked center: M   The play DID John see?
Marked center: V ambiguous with unmarked center.

Figure 21.2.   Staging and cohesion, polar interrogative mode.

Unmarked theme = subject

Unmarked center   Who saw the PLAY?
Marked center: S   WHO saw the play?
Marked center: V   Who SAW the play?
Marked center: M   Who DID see the play?
Marked center: O   ambiguous with unmarked center.

Marked theme = verb

Unmarked center   Saw the play did WHO?
Marked center: V   SAW the play did who?
Marked center: O   Saw the PLAY did who?
Marked center: S   ambiguous with unmarked center.

Marked theme = object

Unmarked center   The play who SAW?
Marked center: O   The PLAY who saw?
Marked center: S   The play WHO saw?
Marked center: V   ambiguous with unmarked center.

Figure 21.3.   Staging and cohesion, non-polar interrogative
               mode, WH- = subject.

Before he reacts to the examples in Figures 21.1,
21.2, and 21.3 as bad English, as many do the first time
they encounter them, the reader should observe his own
thematizing behavior for a day or so. Our grammatical tradi-
tion is heavily biased toward regarding unmarked thematiza-
tion as well behaved and proper, and viewing marked thema-
tization as aberrant. No so; it is part of the language,
used constantly, related systematically to the rest. In
fact, many of the phenomena written off in grammars as free
word order are thematic.

Marked topics are likely to be blocked separately
rather than be included in the same block with the rest of
their clause as they are in the three figures. The subject
and the object are most likely to be blocked separately;
other adjuncts moved to the front are less likely to be
separate information blocks. For these adjuncts, as has
already been mentioned (19.1), blocking is a means of making
their scope explicit.

When the marked topic is a separate information
block, the block that follows it may begin with a foot that
contains a silent stress: Ten + DOLLARS / ˊ he + tried +
to CHARGE me.

3. VOICE

Voice has to do with the relationship between staging
and content. We have already mentioned the mapping rules
that relate content structure to surface grammar by assigning
one role as subject and other roles as other clause functions.
We have also seen that in English (and in some other languages
as well) the subject element is tied up with the expression

of mode--for imperative, no subject; for polar interrogative, modal before subject; and for declarative, subject before modal.

The unmarked mapping that relates the Agent role (when present; otherwise some other role) to subject, which in turn is related to topic via the modal system, is called the active voice. In the active sentence George brought these pickles, George is in the Agent relationship to bring in the content structure, and is at the same time the subject in relation to the mode and the surface form.

The marked mapping pattern dissociates the Agent from subject position and thus from unmarked theme and mode. At the same time it leaves the theme unmarked. In this passive mapping the Agent is treated in one of two ways that are not as easy to handle in the active voice. In the first instance the Agent can be treated as new information, made the center of an information block, but an unmarked center: These pickles were brought by GEORGE. In the second instance the Agent is left out, either because it is vague as in the city was bombed or because it is irrelevant as in I was just told that my uncle died.

Other nominal elements can be made the unmarked topic in the passive voice; thematic status is not restricted to whatever role maps to the grammatical object: These strawberries were given me and I was given these strawberries are equivalent in content but different in staging.

The nonagentive derivation discussed in Chapter 9 is distinct from the passive in English. While the passive retains its agentive meaning even when the Agent is omitted,

the nonagentive leaves out the Agent explicitly, giving us
pairs like the houses were sold (by someone) versus the houses
sold, or the door was opened versus the door opened. Where
the mapping patterns do not include a voice distinction,
as in Huichol, the nonagentive may appear to be the closest
translation equivalent to an English or Spanish passive;
but there is no way an Agent can be brought into the same
clause.

Many languages of the Philippines have an inflectional
pattern called focus for topicalizing within a clause. The
clause typically consists of a verb followed by a subject,
an object, a referent, an associative, and in some languages
a fifth adjunct that does not participate in the focus
system. Every independent verb is inflected for focus on
one of the four adjuncts: in most of the languages the
inflection is ma- or the infix -um- for subject, -en or
-on depending on the language for object, -an for referent,
and i- or pag- for associative. The focused element in the
clause is either taken from a special set of topic pronouns
or, if it is a noun phrase larger than a pronoun, is intro-
duced by a special proclitic to show that it is the topic
of the clause. In relation to the clause order has nothing
to do with signalling what the topic is. In relation to the
sentence and paragraph, however, putting an element (not
necessarily the one that is clause topic) ahead of the verb
topicalizes it for a more extensive stretch. The focus
system is different from a true voice system, although it
has been dubbed that more than once; but there is only one
set of mapping rules involved in subject selection. If an
Agent, for example, is present, it can never be anything but
the subject: Some of the languages use a nonagentive form
that, unlike the typical nonagentive of the Western Hemisphere,

leaves open the question whether the Agent is absent because
it is redundant or because there is no Agent in the semantic
picture at all.

4. STAGING AT VARIOUS LEVELS

We have considered whether embedding and subordina-
tion in surface grammar might not express the results of
thematic choices. The whole dimension of structural coordi-
nation and subordination in discourse--of how we decide
what goes where--seems to be related to the concept of staging
at least as much as to the organization of content. One
could even suggest that hypotactic rhetorical predicates
(14.2) are a part of content structure onto which staging
decisions are mapped.[4]

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[4]It is quite possible that both cohesion and staging,
though ultimately not dependent on content structure, are
projected on it. For example, the decision to talk about
a particular referent could be expressed by attaching a
feature topic to parts of the content tree that have the
index of that referent. This then implies that the ordinary
transformations of language operate on a representation of
the result of linking content, cohesion, and staging to-
gether into a single structure, while an earlier set of
transformations whose form has not yet even been sketched
operates on the separate representations to link them.

Within the clause we have seen that thematic choices
have two kinds of effects: subordination of some elements,
and ordering of others. Voice distinctions in some languages
and focus in others also appear to be controlled by the

speaker's choice about how he wants to present what he has
to say.

Sentences represent a different range of thematic
options. Linkage systems like those of Sanio-Hiowe and
Kayapo maintain a thematic continuity by having a new sen-
tence start from the repetition of the one that preceded
it. Chaining systems, found mainly in the highlands of
Papua New Guinea, point ahead rather than back to maintain
thematic continuity by predicting whether or not the subject
of the next verb will be the same as the subject of the
current one.

Kalinga of the Philippines (R. Gieser ms) allows
the sentence to have a topic, shown by putting the topic
ahead of the verb, that may be different from the topic of
its principal clause as shown by focus inflection. Bororo
of Brazil begins many sentences with a linkage-like element
that gives the point of departure for the sentence; but
unlike a typical linkage it may single out not only the
main clause of the preceding sentence, but also any other
clause or noun element or location.

Paragraphs also have topics, and these themes may
be independent of the topics of their component sentences.
The paper by Menno Kroeker on Nambiquara of Brazil that
forms the appendix to this book illustrates the kind of
linguistic bookkeeping that allows hearers to keep track
of several levels of staging at once!

      Munduruku, also of Brazil but unrelated to Nambi-
quara, uses change of theme to divide a text into para-
graphs. A particle announcing that the theme is to be

changed introduces the first sentence of a new paragraph.
The object or goal of the next main verb is the new theme
(Sheffler ms). In Ivatan of the northern Philippines,
Hooker (ms) reports that the theme of a paragraph is usually
the subject of the first independent clause of the paragraph,
though two paragraphs may have the same theme and be broken
by a discontinuity in the time or space setting.

Ilianen Manobo of the southern Philippines (Wriggles-
worth ms) has a highly developed narrative form in which
there is thematization by episodes as well as by paragraphs
and smaller units. In episodes the topics are participants
in the plot. They are introduced by set formulas: Hane-
diya' te pe' ma te kenakaŋ'ne mevantug. 'Note: there we
are now with the young man who was famous.' 'there'
introduces a character formally for the first time, even
when he has been mentioned before in passing. 'Here', on
the other hand, brings back as topic a character who has
already been the topic of an earlier episode: Engkey pe'
be imbe iya te riya' te pe' kayi te raha. 'What but
indeed there we are here with the young woman.'

Bacairi of Brazil (Wheatley ms) has a pronominal
system that distinguishes thematic third person referents
from athematic ones with reference to the clause. Both
kinds are further divided into focal and nonfocal varieties.
David Cranmer (personal communication) suggests that the
focal category may represent a higher level theme, on the
order of a paragraph theme.

Entire discourses frequently have identifiable topics.
Kroeker's study of Nambiquara illustrates this. It lies
behind Aristotle's observation that 'necessarily, you state
your case, and you prove it' (Rhet. 3:13). The title of
written discourse is a form of topicalization.

CHAPTER TWENTY-TWO

TOPICALIZATION

[Several linguistic devices are used to topicalize
parts of a discourse. Position and inflection were mentioned
in Chapter 21. Demonstratives have special uses in topicali-
zation. Clefting is used in thematic identification, a
rather widespread topicalizing device related in structure
to question formation. Extraposed thematic identification,
tagging, and reprise are other common devices.]

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CHAPTER TWENTY-THREE

VARIABILITY

[While so-called freely varying phenomena do turn
out often to communicate distinctions that linguists had
simply not been aware of, there do seem to be some things
in language that are communicated by statistically perceiv-
able mass effects rather than by specific elements or arrange-
ments. The variable frequency rules discussed by Labov and
by Fasold are an instance of this. Mass effects can be
incorporated in the kind of grammar given here by means of
the concept of parametric predicates.]

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CHAPTER TWENTY-FOUR

POSTSEMANTIC SHAPING

[There is a difference between an underlying repre-
sentation that characterizes the meaning of a discourse
and one that can be related directly to its form. This is
expressed as an intermediate stage. Meaning elements that
do not directly express the speaker's choice, yet are en-
tailed by his choice, influence the surface form of dis-
course and are brought into the discussion here. In the
opposite direction, some choices the speaker makes are
neutralized (Chafe 1970a) in certain environments. Infor-
mation about the speaker-hearer situation (Chapter 5), which
semantically occupies the highest nodes of a discourse, is
brought down and attached to many lower nodes by a satura-
tion process. Certain kinds of information, such as setting
and staging information, trigger or block the consolidation
of propositions and the formation of elements in the surface
hierarchy, including sentences.]

CHAPTER TWENTY-FIVE

LINEARIZATION

[The actual arrangement of linguistic elements in temporal order is separate both from the choice of what to say or the postsemantic shaping of it. This is the point at which decisions about staging and cohesion yield an explicit ordering of content elements.]

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CHAPTER TWENTY-SIX

OUTPUT

[This is a sketch of lexicalization, the kinds of
transformations that take care of housekeeping details,
and the specification of pronunciation or spelling. These
topics are all discussed thoroughly in the literature; this
chapter simply points out where they fit this picture.]

CHAPTER TWENTY-SEVEN

METHODS OF RESEARCH

[This chapter pulls together the suggestions made
throughout the report on organizing and displaying data
for discourse study: outlining, span analysis, cohesion
analysis, clause permutation, substitute permutation, and
frequency analysis.]

CHAPTER TWENTY-EIGHT

LOOKING AHEAD

[A discourse grammar implies the ability to parse
discourses and to simulate the production of discourses.
This chapter discusses prospects of working in this mode.
It also indicates ways in which linguistic studies of dis-
course might influence other fields.]

APPENDIX A

THEMATIC LINKAGE IN NAMBIQUARA NARRATIVE

Menno H. Kroeker

(This paper explores some of the evidence
that staging applies at several levels.   JEG)

INTRODUCTION

The linkage system employed between sentences, para-
graphs, and themes is one of the more complex elements in
the analysis of Nambiquara[1] narrative. It involves sev

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[1]Nambiquara was classified by McQuown and Greenberg
as in the Ge-Pano-Carib Phylum of languages (Sol Tax,
'Aboriginal languages of Latin America', Current Anthropo-
logy 1:5-6.431-436, Sept.-Nov. 1960). There are approx-
imately 200 speakers of Nambiquara in northwestern Mato
Grosso, Brazil. The number of dialect groups remains
uncertain at present. The data for this paper were gathered
on field trips to Nambiquara villages between the years
1961 and 1970 in accordance with a contract with the Museu
Nacional do Rio de Janeiro and with the cooperation of the
Fundaçao Nacional do Índio. The present paper was written
under the auspices of the Summer Institute of Linguistics
at a field workshop held in 1970 at Cuiabá, Mato Grosso,
Brazil, under the direction of Joseph E. Grimes.

A concordance of 21,960 morphemes taken from Nambi-
quara texts was used in the analysis done for this paper.
The concordance was prepared at the University of Oklahoma
Computer Laboratory under the Project for Computer Support

eral sets of connectors depending on the element to be
linked, i.e. whether one is referring to sentences, para-
graphs, or larger discourse units.

TYPES OF LINKAGE

Sentence linkages are most numerous. Some linkages
indicate relative ordering of events in relation to time
as follows.[2] **Simultaneous:** $x\tilde{a}u^3xain^1ti^3kxai^3lhu^2$ $a^2l\tilde{u}^1a^2$
$a^3li^3na^2h\tilde{e}^3ra^2$ ('sleep-they-while tapir left-past') 'While
they were sleeping the tapir left.' **Following:** $x\tilde{i}^3yai^3$-
$nain^1nu^2la^2$ $ai^3ain^1na^2h\tilde{e}^3ra^2$ ('eat-they-after hunt-they-
past') 'After they had eaten they went hunting.'
Punctiliar: $xw\tilde{a}^3ain^1t\tilde{a}u^3$ $ya^2na^1la^2$ $\tilde{i}^2ain^1na^2h\tilde{e}^3ra^2$ ('arrive-
they-when jaguar see-they-past') 'Upon arriving they saw
the jaguar.'

Other linkages indicate logical relationships.
Cause and effect: $x\tilde{u}h^3w\tilde{i}^3ai^1nha^2kxai^3$ $k\tilde{a}^3txa^2$ $x\tilde{i}^3yai^3$-
$nain^1tu^1wa^2$ ('plant-they-because later eat-they-future')
'Because they planted, later they will eat.' **Contrary to
fact conditional:** $x\tilde{i}^3xi^2ke^3la^3te^2kxai^3$ $x\tilde{i}^3yai^3nh\tilde{i}^3na^1wa^2$
$xy\tilde{a}n^1ta^1$ $x\tilde{i}^3xi^2xna^3wa^2$ ('come-if eat-would-I but come-not')
'If he would come I would eat; but he hasn't come.'

Still another type of linkage adds aspects of modal
logic in a similar manner to those listed above. **Supposi-
tion:** $x\tilde{i}^3xi^2na^3na^1$ $h\tilde{a}x^2xw\tilde{a}^3txa^3nu^2$ $xwa^3na^1tu^1wa^2$ ('come-
supposition later go-I-future') 'If he comes (as supposed),
later I will go.' **Intention:** $wa^3ko^3na^1kx\tilde{a}i^2n\tilde{a}n^2tu^3$

[2]The phonemes of Nambiquara are p,t,k,d (implosive
alveolar stop), x (glottal stop), j (alveopalatal affricate),
n (with six allophones: [m] after nasalized vowel glide
au, [bm] after oral vowel glide ãu, [gŋ] preceding a velar
stop and following an oral vowel, [ŋ] preceding a velar
stop and following a nasalized vowel, [dn] on all other
occasions following oral vowels, and [n] on all other
occasions following nasalized vowels), N (voiceless nasal),
ř (only in the final syllable of the independent verb),
l (ř after front vowels, l after all other vowels),
s, h, w, y. Vowels occur in oral and nasalized series
(written with tilde Ṽ): i, e, a, o, u, and two vowel
glides ai and au. Both series of vowels also occur laryn-
gealized, indicated by a hook Ṿ under the vowel letter.
There are three tones in Nambiquara indicated by raised
numbers $^1 \, ^2 \, ^3$ at the end of every syllable. ^{1} is a down-
glide, ^{2} is an upglide, and ^{3} is a low level tone.

yen^{3}kxa^2 so^{1}kxi^{3}na^{1}tu^{1}wa^2 ('work-I-intention things earn-I-future') 'If I work (as intended), I will earn things.'

In all of these examples the linkage is attached to the verb in place of the tense element that occurs in the verb of all independent clauses. Independent verbs always occur in the final clause of a sentence, and dependent verbs in the non-final clauses. Only the verb to which the linkage is attached and the following independent verb are involved in the relationship implied by the linkage. The persons of the verb are suffixed to the independent verb after the stem and before the tense element, or before the linkage element in the case of the dependent verb, to indicate the subject. A pro-verb may be substituted for the dependent verb.

A sentence linkage may also be an inflected free form (i.e. unattached to verbs) between two independent clauses. The reference in such cases is not limited to the immediately preceding clause. It could refer to several closely related clauses. xĩ^{3}yai^{3}nain^{1}na^{2}hẽ^{3}ra^2 ain^{1}nu^{2}la^2 ai^{3}ain^{1}na^{2}hẽ^{3}ra^2 ('eat-they-past they-after hunt-they-past') 'They ate. Afterward they went hunting.'

Paragraph linkage, on the other hand, indicates a change of focus either from one actor to another or from one type of activity to another (for example, a change from an action by an actor to an act of speech by the same actor). a^{2}lũ^{1}ai^{2}li^2 an^{3}nu^{2}la^2 xwã^{3}sxã^3 e^{3}sĩn^{1}na^{2}hẽ^{3}ra^2 xna^{2}ha^{1}te^1 xã^{3}yo^{3}li^{3}kix^{3}tu^{1}wi^1 ('tapir-that kill-after arriving told-us-past then eat-we-future-quote') 'After killing the tapir he arrived and told us. Then, 'Let's go there and eat it', [we said].'

On a higher level still is found linkage for theme,
which is the major concern of this paper.

THEMATIC LINKAGE

Each narrative has at least one theme. The entire
narrative can be considered to have an underlying structure
which is representable by a tree. The narrative has a
global theme, and subtrees within it can have local themes
of their own. Each subtree can be further broken down into
subtrees which are actually paragraphs.

$-jut^3$ is the base form of the main thematic link.
It occurs with up to three orders of prefixes and up to
four orders of suffixes. The central meaning of $-jut^3$
is theme reference. Delimiting factors are supplied by
the affixes.

Prefixes

From the stem $-jut^3$ outward the following prefixes
occur.

Person

There are two series of person markers corresponding
to subject and object. These are identical in form to the
obligatory verb person suffixes. They provide identifica-
tion with a previously mentioned event. If, for example,
the previous event was focusing on a first person theme,
$-jut^3$ would always occur with the first person marker when
referring to that theme.

Normally the subject series occurs. If, however,
an object pronoun is used to refer to the theme in the

verb immediately preceding an occurrence of -jut^3, the person marker prefixed to -jut^3 will reflect it hãi^{1}xn^3-ti^{3}xã^1 ya^{2}lun^{1}txi^3 hxan^{3}ki^{2}sa^{3}na^{2}hẽ^{3}ra^2 jã^{1}xne^{3}sa^{2}ju^{3}kxai^3-lhu^2... ('all dying disappeared-from-me-object-past again-thus-me-object-theme...') !Every one, dying disappeared from me. Again-thus with me, my situation...'

Subject person markers are first singular na^1-, second singular nĩn^1-, third singular zero. Plurals are prefixed to the corresponding singular forms. The first plural is sĩn^1-, second plural lxi^3-, third person plural ain^1-; there is also a second dual yah^3-. Object person markers are first singular sa^3-, second singular xna^2-, third person zero. The plurals immediately follow the corresponding singular object forms. The first plural is sĩn^1-, second plural lxi^3-, third person plural ain^1-, as with the subject markers; but there is no second person dual.

In an autobiographical text by one of my informants we have the following examples, which are cited in reverse sequence from the order in which they occur in the text. Each of these sentences refers to the local theme, which is enunciated at the beginning of Sentence 3 and repeated in the same sentence. They are the only ones in that part of the text in which a first person -jut^3 is found. Therefore we conclude that each occurrence of -jut^3 refers back to the local theme of 'my early past'.

Sentence 14. jã^{1}xne^{3}na^{1}ju^{3}kai^{3}la^1 txa^{2}si^{3}ton^{1}yau^3-xna^{1}hi^{1}nu^{1}tai^{2}kxai^{3}la^1 kox^{3}nha^{2}tet^{2}txã^{3}wa^2 ('Again-I-theme my-past-child-dwelt-when-remote-past know-not-I') 'Again this my theme, about the time when I was a child I don't know first hand.'

Sentence 11. $já^1xne^3na^1jut^3su^2$ $ăin^2txi^3sa^2hxai^2hĕ^1ra^2$. ('Again-I-theme sad-me-past tense') 'Again this my theme, I was sad.'

Sentence 9. $já^1xne^3na^1ju^3kai^3la^1$ $kat^3ja^3la^2$ $xwã^2ãn^3tsi^3xwe^3yah^3lxi^1nhi^1ni^2$ xne^2 $ã^2nu^2la^3$ $xĭ^-ton^3sxã^3$ $ya^3lu^2xãn^3tsi^3xwe^3san^3tã^1$ $xne^3hxai^2na^1hĕ^1ra^2$ ('Again-I-theme whiteman arrive-begin-you pl. thus people sickened. died-began-deduction thus-it always was') 'Again this my theme, when you white men began to come, thus the people began to sicken and die.'

Sentence 3. $txa^2si^3kxã^3xna^-u^1thi^3nãn^2tu^3$ $kãx^3nhĭ^1-nu^1tai^3nãn^2tu^3$ $txa^2si^3don^1xyau^3na^1tãu^-u^1tai^2nãn^2tu^3$ $xĭh^1te^2-sa^1wa^2$ ('My-past-time-remote long ago-remote my-past-childhood-long ago was-I-know') 'My early past, long ago, my childhood days were thus, I know.'

In the same section of text we have $-jut^3$. occurring with third person in one instance. The theme in this case is a third person referent, the story itself. And the only reference made to it is in Sentence 12. As shown in the example, reference goes back to where the third person theme is introduced at the beginning of the text:

Sentence 12. $já^1xne^3jut^3su^2$ $xĭ^3ye^3a^1tu^1wa^2$. ('Again-theme speak-I-future') 'Again this theme, I will speak.'

Sentences 1 and 2. $xĭ^3ye^3a^1tu^1wa^2$. $ăin^3ki^2sa^2hĕ^1ra^2$. ('Speak-I-future. Listen-me-imperative.') 'I will speak. Listen to me.'

Pro-verbs

The pro-verb xne^3- 'thus' provides additional reference to the previously mentioned theme. It always occurs immediately preceding the person marker: $j\tilde{a}^1xne^3$-$na^1jut^3su^2$ ('Again-thus-I-theme') 'Again thus my theme.' Pro-verb in this paper is used in much the same way that the verb $\underline{do}$ is used in English, as in I like ice cream, don't you? It differs from other verbs in that it cannot have the prefixes found on verbs.

Occurrences of other verb stems with $-jut^3$ are very infrequent. Since $-jut^3$ refers to a theme, it is rarely possible to insert a verb stem in this position. An example where this does occur is: $xne^3sa^2jut^3su^2$ $\tilde{a}^3ye^3a^1jut^3su^2...$ ('Thus-me-theme see-I-theme...!') 'The event being thus, I seeing the event...' In this case the narrator is giving the proof of his story by emphasizing that he had seen it.

Repetition

The repetition indicator $j\tilde{a}^1$- occurs in the third position before $-jut^3$. It refers back to an event that is part of a theme already mentioned. This reminds the hearer that the event is in progress. $j\tilde{a}^1$- informs the hearer that the event it goes with is the same as one already given, not a different event of the same kind. $x\tilde{i}^3yai^3na^1h\tilde{e}^3ra^2$ $j\tilde{a}^1xne^3jut^3su^2$ $x\tilde{i}^3yai^3na^1h\tilde{e}^3ra^2$ ('Eat-I-past again-theme eat-I-past') 'I ate, again referring to that previous occasion, I ate.' $x\tilde{i}^3yai^3na^1h\tilde{e}^3ra^2$ $xne^3jut^3su^2$ $x\tilde{i}^3yai^3na^1h\tilde{e}^3ra^2$ ('Eat-I-past thus-theme eat-I-past') 'I ate. Thus referring to that previous occasion, I ate.' In the first example $j\tilde{a}^3$- indicates that it is the same action in both verbs. In the second example; however,

eating occurred on two occasions. The first instance where $j\tilde{a}^1$- does not occur in the text mentioned comes in Sentence 23; the speaker up to there is discussing a single situation using many linked sentences to do it. In 23, however, we find only $na^1jut^3kxai^3la^1$ ('I-theme-nominal'). Following this form the narrator tells a specific incident relating to the continuing theme of the narrator's past. By omitting $j\tilde{a}^1$- he makes a fresh start and gives new information though the new incident is by no means unrelated to the situation already described.

Prefixes thus inform the listener as to the person of the theme and as to how the action is progressing.

Suffixes

From the stem outward the following suffixes occur.

$-n\tilde{u}^3$

$-n\tilde{u}^3$ follows $-jut^3$ directly. It signifies an addition to present information similar to the English also. $j\tilde{a}^1xna^1jut^3t\tilde{u}^3kxai^3la^1$ ('again-thus-I-theme-also-nominal') 'also I on the same theme'.

$-ai^2$

$-ai^2$ is in the second position following $-jut^3$. It refers to remote past time, setting the theme into the past and emphasizing the earliest aspects of the theme. $jut^1tai^2kxai^3lhu^2$ ('theme-past-nominal') 'About-that-time-earlier-in-time'.

$-kxai^3lhu^2$ and $-su^2$

$-kxai^3lhu^2$ and $-su^2$ are endings of the third position after $-jut^3$. They are normally found on nouns as

stem formatives as in sxi^2su^2 'house' and $in^3txa^2kxai^3lhu^2$
'man'. They imply that a subtree in the development of
the theme may be terminated with the next sentence, which
is normally a summarizer.

$-la^1$

$-la^1$ is also in the third position after $-jut^3$,
and therefore mutually exclusive with $-kxai^3lhu^2$ and $-su^2$.
It indicates that there is more to come on the same theme.

$-ta^3la^3$

$-ta^3la^3$ is a negative when it occurs on nouns. Its
use here, however, is limited to occurrences correlative
with an immediately following connective form $na^2ha^2kxai^3$
which together have the literal meaning 'not, therefore
then'. Idiomatically it signifies the completion of one
theme and presupposes a new theme immediately following.
It does not cooccur with other suffixes.

GLOBAL VS. LOCAL THEMES

One can think of narrative themes as being global
or local in scope. A global theme is the overall theme
for the entire narrative. Local themes are those which
are in force for only a part of the narrative before giving
way to a new local theme or returning to the global theme.
The global theme constitutes the hierarchical framework
of the narrative in its entirety, and subtrees within it
join to make up the substructure of the narrative.

Frequently the global theme of the narrative is
given in one of the first two sentences. A subsection of
the narrative tree, however, may also be introduced immed-

iately afterwards with its own local theme. It is usually
accompanied by a temporal setting and a possible locational
setting. These settings occur as free temporal phrases or
free locative phrases elsewhere in the theme sentence.

The theme of this subtree remains in force as long
as a single temporal or logical sequence is being followed.
When, however, a break occurs, the narrator must inform his
listener as to which theme he will be talking about and as
to which theme he has been talking about in the immediate
context.

Continuation of the same sequence is signalled by
means of $-la^1$ as previously described. When $-la^1$ is not
used the preceding local theme is taken as summarized by
the event just narrated. A frequent occurrence of this is
found when the narrator gives his own reactions to events
as a logical sequel to them in the development of the theme.
$xne^3jut^3su^2$ $\tilde{a}in^2txi^3sa^2hxai^2h\tilde{e}^1ra^2$ ('Thus-theme-referent
sad-me-past') 'The situation being like that, I was sad.'

A theme may continue on with several occurrences of
$-la^1$. There is no apparent limit on the number of times
$-la^1$ may occur; but something new is added to the story
after every occurrence. A sequence thus expands the theme
by giving more details in the second telling. In such a
case, $j\tilde{a}^1xne^2$- signals that it is a retelling of the same
sequence. However, reference back to the narrative theme
by means of $-jut^3$ can be made only at the end of the telling
of an event. Thematic links pointing to a different theme,
either global or local, are signaled by the person markers
(unambiguously marked only if one is third person and the
other first person), and in the repetition of the verb
that was used to introduce the theme in its first occurrence.

The theme of a new subtree is introduced only after
the old subtree has been closed off by $\underline{jut^1ta^3la^3}$ 'event
referent, negative'. When this has been signaled a new local
theme will be developed in the same manner as the first
one was.

Once all local themes have been discussed, $-\underline{jut^3}$ is
not required to refer back to previous themes in a final
summary. A specific time reference of identical form to
the one used for the introduction of a theme is all that
is required.

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