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THE MANAGEMENT AND COMPREHENSION OF DISCOURSE CONNECTION

BY PRONOUNS IN ENGLISH

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Robert Neal Kantor, A.B., M.A.

* * * * *

The Ohio State University
1977

Reading Committee:
Arnold M. Zwicky
Robert J. Jeffers
Michael L. Geis

Approved By
Arnold M. Zwicky
Adviser
Department of Linguistics
ACKNOWLEDGEMENTS

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VITA

November 6, 1951 ................... Born - St. Louis, Missouri

1972 .............................. A.B., University of Missouri, Columbia, Missouri

1972-1973 ......................... Research Assistant, Bioengineering Program, University of Missouri, Columbia, Missouri

1973-1977 ......................... University Fellow, The Ohio State University, Columbus, Ohio

1974-1976 ......................... Teaching Associate, Department of Linguistics, The Ohio State University, Columbus, Ohio

1975 .............................. M.A., The Ohio State University, Columbus, Ohio

PUBLICATIONS


FIELDS OF STUDY

Major Field: Linguistics

Studies in Discourse, Pragmatics, and Functional Syntax.
Professors Arnold M. Zwicky and Susumu Kuno

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INTRODUCTION

This thesis has two goals. The first is to provide an answer to the question of why it is that in some discourses like (a):

(a) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. They were built for the army but served the merchant class as well.

the pronoun They of the final sentence is not immediately comprehensible to most readers, even though the pronoun reference is unambiguous. The second goal here is to provide an answer to why it is that a good writer will avoid the use of a pronoun in the last sentence and will instead use a phrase like These roads in place of the pronoun They, whereas a not so good writer might well use the pronoun.

The account that must be given to answer these two questions is unexpectedly lengthy. The reason for this is that what must be investigated here is not the concept of grammaticality of an utterance, but rather comprehensibility of a discourse connection. Traditional syntactic research has focussed on the characterization of grammaticality, the idea that a given sentence is either well-formed in a language or it is not well-formed. Data like (a) cannot, however, be characterized by the terms well-formed and ill-formed. Every
sentence in (a) is well-formed, grammatical, and (a) as a whole communicates a message with a perfectly non-anomalous meaning. Yet the pronoun is not immediately comprehensible to the reader, and a good writer would not use the pronoun.

In Chapter 1 of this thesis, I address the problem of characterizing a connection in discourse as being at the same time, well-formed, meaningful, but for some reason, incomprehensible. I call discourses in which this phenomenon occurs inconsiderate discourses. Inconsiderate discourses are opposed to anomalous discourses, as in

(b) Mary never did buy a watch. It had a gold watchband.

which do not communicate a semantically well-formed message. I suggest that a speaker or writer has two different kinds of knowledge of his language. The first kind of knowledge is that which keeps him from uttering (b), that is, the knowledge he has about what will in a language and what will not communicate a well-formed meaningful message. The other kind of knowledge the speaker or writer has is knowledge of the comprehension abilities of his hearer or reader. It is this knowledge, what I call the speaker's or writer's secondary linguistic competence, that I investigate in this thesis.

In order to find out what kind of knowledge the secondary linguistic competence is, it is necessary to know what language phenomena will cause the hearer or reader to have comprehension difficulties. In Chapter 2 I restrict myself to studying the comprehension of reference, and more specifically, to the comprehension of co-reference by pronouns in discourse. In this chapter I present a set of contexts in which pronouns are found to be more or less
comprehensible.

In Chapter 3 I try to make sense out of the data of Chapter 2. That is, I attempt to sort out the linguistic constructs that conspire to cause ease or difficulty of the comprehension of a pronoun in discourse. My conclusion is that the comprehension of a pronoun will be dependent on the degree to which the reader or hearer is thinking about the referent of the pronoun. This degree of activatedness, as I call it, is found to be dependent on certain linguistic constructs, topic, discourse function of a sentence, and the communicative value of the syntactic position of the referent of the pronoun.

In Chapter 4, I present a linguistic model for the speaker's or writer's secondary competence. This model proposes that the speaker knows the linguistic constructs that affect the activatedness of linguistic elements. It is claimed that the speaker acquires a set of rules and conditions based on these constructs and the concept of activatedness. By this knowledge that the speaker has acquired, he is able to communicate his message taking into account the processing capabilities of his addressee.

Throughout this thesis, I note that speakers or writers differ among each other in their rules of secondary competence, and I also note that particularly for writing, the secondary competence is often not learned, or learned in a manner such that a writer may not always take into account the abilities of his reader. He may, for example, use a pronoun in discourse (a) above, truly believing that his message will be comprehensible. In Chapter 5 I suggest that we
should study raw data from unskilled writers in order to get an idea about what rules and conditions of secondary competence they might or might not be using. By studying such data, we might be able to develop better materials and methods for teaching writing. We can also benefit by studying reading comprehension, for from this kind of study, we may find out more about what the processing capabilities of the reader are, and what the writer must to do take these capabilities into account.
1.0 Introduction

In this chapter I will define my object of study, discourse. I will then argue for a distinction between doing a sentence-level analysis of language and doing a higher level analysis of language on the discourse level, which requires the researcher to take into consideration intersentential connections. The chapter concludes with a discussion of what a speaker of a language knows about his language, that is, the speaker's linguistic competence, and what forms this competence might take. I want to make a specific claim that not only does a speaker of a language have a knowledge of the rules of, and conditions and constraints on, his language in accordance with which knowledge he produces grammatical and meaningful utterances, but that the speaker of a language also has a secondary competence, another set of rules and constraints which he "plays by" in order to communicate his message taking into account the comprehension abilities of his addressee.

1.1 Discourse and text

1.1.1 What is a discourse? What is a text?

Before I discuss a methodology for investigating discourse, a decision must be made on what the proper object of study is. It will be helpful to consider Halliday and Hasan's 1976:1-2 notion of text,
since I will be quoting extensively from their work later, and I will
not be using quite the same terminology that they use. Text, they say,
'is used in linguistics to refer to any passage, spoken or written, of
whatever length, that does form a unified whole.' They further go on
to say:

A text is best regarded as a semantic unit: a unit not of
form but of meaning. Thus it is related to a clause or sen-
tence not by size but by realization, the coding of one sym-
boric system into another. A text does not consist of sen-
tences; it is realized by, or encoded in, sentences. If we
understand it this way, we shall not expect to find the same
kind of structural integration among the parts of a text as
we find among the parts of a sentence or clause.

It is a shame that Halliday and Hasan have used the term 'text' as
they do, for this term is generally used to refer to written or
printed words. I see no reason to change the traditional meaning here,
except to extend the meaning of text to include any corpus under study.
Text, then, will refer to the physical realization of some semantic
unit of discourse. I believe, like Halliday and Hasan, that a distinc-
tion is needed between the structured semantic content of what is said
or written, and the physical realization of this content. I think it
best, however, to use two terms for this distinction and to say that a
discourse is realized by a text.

A presupposition of the view that a semantic level of discourse
is realized as a physical entity is that what is written or uttered is
pre-planned. This is clearly the case for printed works in which the
author has had the time to think about his manuscript, write it, alter
it, proof it, etc. But even in a casual conversation, we must assume
that the speakers involved have some content in mind that they wish to
communicate before actually producing their utterances. Now the time
allowed for planning utterances in conversation may not be a very long
time, and so a speaker may fail to communicate his message well. But
the ways in which or reasons why the speaker fails to communicate his
message are of great linguistic interest. A number of these failures or
infelicities of communication will be discussed in section 1.4.3, and
throughout this thesis, for my concern here is exactly to identify some
of the reasons why an utterance (or more generally, a text or portion
thereof) is not well-comprehended.

1.1.2 Kinds of text

Under the definition of text given in the previous section, we may
recognize two major kinds of text: **written texts**, that is those texts
that are printed or handwritten, and **oral texts**, those spoken.¹ There
are also a number of subtypes of text that can be distinguished along
the lines of physical realization of a semantic content.

We can include distinctions like **formal** or **casual** as different
types of text, for these distinctions are characteristically marked by
physical differences in syntactic structure, lexical selection, phonolo-
gical rules, etc. Silva and Zwicky 1973 survey some of these dif-
f erences and note that mixing elements characteristic of formal with
those characteristic of casual text creates rather odd sentences. They
note (p.66), for example, that sentences like (1), in which formal
syntactic patterns like Negative Adverbal Preposing cooccur with
casual lexical items like **go for** and **you know**, are decidedly odd:

(1) ??Never did he go for rock or cool jazz, you know.

Similarly, formal lexical items cooccurring with casual syntactic
processes like Topicalization also produce what Silva and Zwicky call
discord, for example in (2):

(2) ?Men who eschew controversy we are not in need of.

It is important here to understand that the semantic nature of what is communicated is not a factor in distinguishing formal from casual text. While (1) involves discordancy, (3) and (4), consistently formal and consistently informal respectively, communicate just about the same semantic content:

(3) Never was he a devotee of rock or cool jazz, you do realize.

(4) He never did go for rock or cool jazz, you know.

The same speaker in telling a story might well utter sentence (4) in a rather intimate setting, and (3) in a much more staid setting. This is why I consider the casual/formal distinction a textual one, and not a discourse distinction.

Other distinctions, too, can be made for kinds of text. Register differences, such as baby talk register, the speech of adults to very small children, can be classified as a subtype of oral text. Garnica 1977:23-9 surveys some of the features of this register. These include certain phonological processes, for example simplification of consonant clusters, tummy for stomach, lexical processes like reduplication, night-night for good night, simplification of syntactic processes, for example, avoidance of embedded or conjoined structures.

In the headline register of newspapers, Perkins 1974ms shows that certain syntactic processes are employed, particularly deletions. So, a sentence like (5):

(5) A husband and wife will give a talk on marital problems.
will appear in a headline as (6):

(6) Husband, wife to give talk on marital problems.

Similarly, Sadock 1974a finds a number of deletion processes and constraints in the syntax of instructions for taking medicines, using household products like bug spray, and recipe instructions. An example of a characteristic deletion in a recipe is (7):

(7) Place egg whites in a saucepan. Beat Ø until foamy.

For all these types and subtypes of text, the differences are those that have to do with the syntactic, lexical and phonological realizations of possibly the same sorts of semantic notions.

1.1.3 Kinds of discourse

Discourse types will be distinguished along the semantic/pragmatic line of communicative aim, that is, what the speaker is trying to do with his discourse. We may speak of expository discourse, a discourse by which the speaker or writer wishes to inform or argue for a point, something of what we might find in a history book or this dissertation. There is conversational discourse, a broad category that includes any two or more person exchange. There is narrative discourse in which a story is told, as in much of the Bible or in a novel.

We can also get quite specific and delimit more narrow communicative situations. For example, Sinclair and Coulthard 1975 have done a study of classroom discourse, the interaction between teacher and students. We could identify courtroom discourse, door-to-door salesman discourse, etc., anything having to do with some specific communicative aim.
While it is true that certain kinds of discourses may be realized by certain kinds of text, for example, a mother might use baby talk register in a conversational discourse with her young child, there is nothing to preclude any arbitrary syntactic construction from appearing in most any kind of discourse.

In this thesis, I will be dealing with expository discourse for the most part. Most of my data come from written formal text. But I will have some to say about oral text, and much to say about discourse in general.

1.2 Syntax-based methodology

Beginning with Chomsky 1957, the basic goal of many American grammarians has been the characterization of the syntax of all and only the grammatical sentences of a language. These grammarians have also been interested in accounting for the perceived semantic identity of two or more structurally dissimilar sentences and for the perceived semantic ambiguity of the same sentence. The first step toward accomplishing these goals is to determine what kinds of sentences are grammatical and what kinds of sentences are ungrammatical for a given language or dialect. The next step is to determine what the relationships are among the elements of the surface structures of the grammatical sentences. One must then determine an underlying or semantic structure for those sentences and determine rules for moving from the underlying structures to the surface structures and/or vice versa. Arguments for the existence of the rules or particular semantic or syntactic structures are drawn from a combination of intuition, insight, and a comparison of sentences claimed to be derived
from the same semantic structure, or claimed to have similar syntactic structures.

That we need to have a model of syntax is beyond question. The existence of syntactic rules is characteristic of every human language. We find rules that change the grammatical relations among sentence elements, like Passive in English, rules that account for embedding of one structure into another, like Relative Clause Formation, rules for conjoining sentences, rules that determine concord among sentence elements, etc. There are rules controlling the order of elements in a sentence, and while some have claimed that 'free word order' languages exist, (for instance Stea 1967), none have claimed that absolute free word order is possible. That is, while major syntactic categories like subject, object, and verb might appear in various permutations, say orders like SOV, SVO, OSV, etc., within the same language, it is clear that the constituents that make up say, a subject, can not be randomly scrambled throughout the sentence. For example, we can say with confidence that no language of the world would render the subject of the English sentence in (8):

(8) The three well dressed firemen thought that John would return to the station soon.

in a totally random fashion throughout the rest of the sentence, as in (9):

(9) The thought that well John firemen dressed would return three to the station soon.

So, we do need a model for expressing the syntactic regularities of a language.
The assumption underlying early syntactic research was that one could posit an abstract human, known as the ideal speaker-hearer, who could say whether or not a particular sentence was grammatical in the language, whether it realized two different meanings, and whether two sentences could be said to have the same meaning. A linguist, using his intuition about his language, could approximate with a high degree of success this linguistic competence of the ideal speaker-hearer. The linguist could further formalize this competence by constructing a grammar of the language, a set of rules which would account for the linguistic competence of a speaker of a language.

Now the grammar developed by Chomsky assumed a level of deep or underlying structure from which a semantic interpretation of a sentence could be determined. Chomsky 1965:35 states:

...[we assume] that the semantic interpretation of a sentence depends only on its lexical items and the grammatical functions and relations represented in the underlying structures in which they appear.

The determination of just what the underlying structure looks like has been a point of controversy for a number of years now. Chomsky 1965 argued for the existence of rules of semantic interpretation that map deep structures into corresponding semantic representations.

Other linguists, notably McCawley 1973, have argued that semantic and syntactic representations are of the same character. So, underlying structures became more semantic, more abstract. A sentence like (10):

(10) John killed Bill

was represented in underlying structure by abstract predicates, so that sentence (10) looked like structure (11) in underlying structure:
(11) John CAUSE Bill BECOME NOT ALIVE

This kind of representation by abstract predicates would allow the grammar to account for the perceived ambiguity of sentence (12):

(12) John almost killed Bill

which has at least the paraphrases (13a) and (13b):

(13) a. John almost did something that would have killed Bill
    b. John did something to Bill that caused him to almost die

The underlying structures of (13a) and (13b) would be (14a) and (14b) respectively:

(14) a. John almost CAUSE Bill BECOME NOT ALIVE
    b. John CAUSE Bill almost BECOME NOT ALIVE

Even the abstract predicate analysis is beginning to falter as linguistic research shows the existence of pragmatic conditioning of syntactic phenomena. So, for example, Bolinger 1977:22 finds that in some contexts, a pronoun on the left in two coordinate clauses is appropriate only when there is some relationship between the clauses other than just a purely temporal one. Compare (15) and (16):

(15) *He₁ looks at the wall and John₁ throws the ball at it.
(16) He₁ looks at me and John₁ goes out of his mind.

Here there is only a temporal relationship between the clauses of (15), whereas in (16) a causal as well as temporal interpretation is easily made. Note that the syntactic structures of the two sentences are identical. It is only the pragmatics of the different situations described in (15) and (16), pragmatic considerations based on cultural knowledge of the ways people act, that allows the speaker to convey the
semantic/pragmatic causality using the conjoined structure, and which further allows the hearer to perceive this relationship. And on top of this, the position of the pronoun is found to depend on the speaker's intent.

Such pragmatic conditions are not likely to be easily formalizable. Descriptions of degrees of grammaticality, or conditions on syntactic rules based on speaker's knowledge of the world, speaker's communicative aim, etc., do not correspond to syntactic nodes on a phrase structure tree, nor even to any formal system of logic yet devised.

So, in the example just given, we can see the utter ad hocity of trying to label a deep structure representation to account for the difference between (15) and (16). Both (15) and (16) have temporal paraphrases (17) and (18) respectively:

(17) John looked at the wall and then he threw the ball at it.

(18) John looked at me and then he went out of his mind.

Now (18) does not seem to have quite the same meaning as (16), and yet it is in fact difficult to see what kind of deep structure source sentence (16) could have other than (18), or some kind of adverbial clause plus main clause like (19):

(19) After John looked at me, he went out of his mind.

A more exact paraphrase of (16), something like (20):

(20) John looked at me and something must have snapped in his head, and he went out of his mind.

is hopelessly unrelated structurally to (16), such that we might have a straightforward derivation of (16) from (20).
Abstract predicates will do no good either. An abstract predicate like CAUSE as in (21):

(21) John's looking at me CAUSE John went out of his mind.

does not adequately capture the semantics of (16). Sentence (16) does not mean (22):

(22) John's looking at me made him go out of his mind.

We might try a different abstract predicate, AS A RESULT OF, as in (23):

(23) John went out of his mind AS A RESULT OF John's looking at me.

but this too seems rather ad hoc, for the same predicate used with a different sentence, (24):

(24) John unlocked the door AS A RESULT OF John's finding the door locked

cannot result in (25):

(25) *He finds the door locked, and John unlocks it.

It simply will not be possible to invent some kind of abstract predicate to properly account for this kind of pronominalization behavior. Bolinger 1977 presents a wide variety of pragmatic factors that control the syntactic restrictions on pronouns on the left with full nouns on the right. He finds, in fact, that we should not even speak of 'pronominalization of one NP by another', but rather of the speaker reidentifying a referent for a particular purpose. Increasingly, linguists are realizing that these so-called pragmatic factors are some of the most interesting aspects of good descriptive characterization of what are and what are not grammatical sentences in a language.
My purpose in writing this section has been to show the problems connected with the formalization of a theory of grammar. I will not take a stand here on what kinds of formalism should be used in a grammar. What is important here is to be able to make the best description possible of language phenomena. In doing so, we will identify exactly what a grammar should account for. In this section, we have seen, for example, that a grammar should in some way account for the ambiguity of a sentence like (12):

(12) John almost killed Bill

and we have seen that the reason for this ambiguity has to do with the scope of the adverb almost. We have also seen how some pronoun occurrences are dependent on pragmatic facts.

What I want to do in the next sections of this chapter is to look not at the formalism for accounting for syntactic/semantic behavior, but rather to look at the notion of 'grammaticality of a sentence'. We need to know what phenomena we are trying to account for before we develop mechanisms to account for them.

1.3 Grammaticality or appropriateness?

In addition to determining what is or is not considered a grammatical sentence, many linguists are finding that the use of a particular grammatical sentence may itself be constrained, that is, many sentences that are grammatical are appropriate only when certain pragmatic or social conditions obtain, and sometimes never appropriate. Robin Lakoff 1971:115fn suggests the following distinction:

Let us try to reserve the term ungrammatical...for anomalies that arise out of violations of syntactic rules alone: John and Bill is here. More often, we will be considering sentences that are syntactically well formed, but semantically
deviant for one reason or another. Perhaps they are used in a (previously-defined) situation in which they are inappropriate (though in another context, they might be perfectly acceptable); perhaps they force the speaker or hearer to assume the existence of a situation that he knows cannot exist in the real world; perhaps they suggest a relationship between two things that it is illogical or unreasonable to consider related. These sentences will be judged odd, or unacceptable, by speakers although superficially their structure conforms perfectly to the rules of syntax. Cases like these will be considered anomalous whatever language they are translated into (as opposed to purely ungrammatical sentences, which may vary from language to language), unless their inappropriateness arises out of special cultural assumptions. Yet sentences like [??Boys eat apples and Mary threw a stone at a frog] are much more readily intelligible, and deviant in a different sense, from sentences which are bad because selectional restrictions, and so forth, are violated: Colorless green ideas sleep furiously. Linguistic theory should incorporate within it the means to describe and discriminate among all these types of anomaly: all are within the province of language use.

An example of a socially inappropriate use of language would be the use of the tu pronoun in French in addressing, for instance, one's professor. Pragmatic or real world considerations may also lead to inappropriateness.

Hawkins 1977a:19 notes that a first-mention definite description in certain contexts may only be used when the speaker and hearer share a general knowledge of the relationship between two objects. So, (26) is an appropriate sequence, because the speaker and hearer share the knowledge about the relationship between a town, Halifax, and the fact that a town may have a town clerk. Sequence (27), however, is quite bad, for there is no general knowledge of a connection between a box and a glass.

(26) Halifax is an interesting place to live. The town clerk was involved in a scandal last year.

(27) ?The postman brought us a box this morning. The glass was broken.
Note that in no case in the preceding utterances do we find an ungrammatical sentence as Lakoff has defined it. Further, the conditions on appropriateness depend on shared knowledge of the speaker and hearer, a knowledge which can be described in general terms, but a knowledge which cannot be described for what we might call the 'ideal speaker-hearer pair', for speaker-hearer pairs may differ as to what knowledge they share. So, two geologists might well converse as in (28):

(28) I got a specimen of mica from Arkansas the other day.—Oh, were the garnets red or green?

but the layman would not be expected to understand such a conversation unless he knew that mica often contains garnets.

The point to be made here is that the methodology for determining appropriateness and describing it must make appeal not to an ideal speaker-hearer pair, but rather to what the researcher considers the shared knowledge of the particular speaker-hearer pair in a particular situation. So, when we speak of discourse appropriateness, we speak not of grammaticality, nor even of what might be called 'well-formed discourses', for with enough shared knowledge, almost any sequence of sentences lend themselves to making sense to someone. In determining what kinds of linguistic data are appropriate or not, or if appropriateness is even the correct term, we must explore data from two standpoints, that of the hearer or reader, and that of the speaker or writer. In the next section, I will do just this, and I will arrive at a different kind of distinction from Lakoff's grammaticality/appropriateness distinction, one that I will call an anomaly/inconsiderateness distinction.
1.4 Anomaly and inconsiderateness

1.4.1 The speaker or writer

We assume that a speaker or writer has a discourse in mind, and in accordance with the rules of his language, he produces a text, a sequence of sentences. Now a sentence like (15):

(15) *He looks at the wall and John throws the ball at it.

will presumably never be produced in a text by a speaker or writer, except as a performance error. If one can determine, like Bolinger has tried to do, the rules and constraints on sentence structures, be these rules and constraints of a pragmatic nature, a semantic nature, or a syntactic nature, then one may legitimately say that a speaker or writer in violating such rules or constraints has indeed produced an anomalous sentence, where by anomaly, I mean that the speaker has not produced his intended meaningful message. We may speak of (15) as being pragmatically anomalous. Similarly, using a referring expression where no possible discourse referent exists yields a pragmatically anomalous discourse, as in (29):

(29) *Martha never bought a watch. It did have a gold watchband.

A speaker who violates selectional restrictions as in (30):

(30) Colorless green ideas sleep furiously

can be said to have uttered a semantically anomalous sentence. Again, we would not expect a speaker who knows his language to produce such a sentence. We may further classify Lakoff's sentence (31):

(31) John and Bill is here

as a syntactic anomaly.
To understand a discourse, a hearer or reader of a language clearly must use all he knows about his language, his knowledge about syntactic structures, lexical relations, etc. Further, the hearer or reader must make various inferences from time to time, and in general must bring to bear any knowledge about the real world, or about the discourse world created by the speaker or writer, which might be relevant to understanding the discourse. When the hearer or reader brings all these abilities to bear on the interpretation or comprehension of a non-anomalous discourse, and still cannot comprehend or has trouble in comprehending the discourse, we will say that discourse is inconsiderate for reason X, where 'X' is the processing capability of the hearer or reader which has been pushed to the limit, or a limit, and fails to return the message intended by the speaker or writer.

Consider again discourse (27):

(27) The postman brought us a box this morning. The glass was broken.

Can this discourse be said to be anomalous? I think not. The speaker or writer knows what he wishes to say, knows that there was glass in the box, and therefore utters or writes (27). Only one problem—the speaker or writer has not taken into account his addressee's processing capabilities, that is, the fact that his addressee is unable to make the connection between box and glass. The speaker or writer here has been quite inconsiderate!
1.4.3 An analogy

Perhaps an analogy at this point will be helpful in understanding the distinction I am making between inconsiderateness and anomaly. Imagine a logician at State U. presenting to his seminar a proof he has just completed. The seminar members will judge whether or not their instructor's proof is a correct one. They will judge the proof incorrect or fallacious if:

1) the logician uses false premisses
2) the logician uses logically contradictory premisses
3) the logician uses a rule of inference wrongly
4) the logician uses an invalid rule of inference
5) the logician uses a non-well-formed formula.

Now any logician who has good training and good judgment will not make these kinds of errors. We may assume that our mythical assistant professor of philosophy avoids these wrongdoings. If he had committed any of the above logical sins, we would suppose him to have been tired or distracted when he prepared his lecture notes, and still tired when he presented his proof, for we know that this bright logician would normally correct his notes as he made his presentation.

Returning again to the seminar meeting, we find that a number of the students, while respecting their instructor's knowledge of his subject, find his presentations to be quite confusing at times. (Those who don't find the lectures confusing are hopelessly failing the course.) Many of the brighter students in the class have said on their evaluations of the instructor that he is often inconsiderate of the abilities of the seminar participants. Some of their complaints about
their instructor's presentation of proofs are:

1) he uses words the class members don't know

2) sometimes he starts talking about his thoroughbred right in the middle of his presentation—"Now a horseshoe b. Speaking of which, my racehorse, Findlay Slain, needed reshoeing the other day."

3) he makes use of suppressed premisses

4) he leaves out critical steps in the proof and doesn't tell his students about them

5) he doesn't say how a certain step in the proof follows from another

6) he goes off into a subproof without saying that he's doing so

7) he fails to remind his class of something important he's now using that he proved to them last semester

8) he uses two different names to refer to the same variable without telling his class so

9) he uses the same name for two different variables, and while he never confuses the two, he never tells his class what he's doing

10) he repeats where he doesn't need to

Now none of the ten complaints made by the class members invalidates our logicians's skill or insight. He certainly does produce correct if not insightful proofs. Yet the chairman of the philosophy department has remarked of late that his brilliant young assistant professor has not yet had a journal article accepted. After seeing the student evaluations and sitting in on our friend's class, the chairman understood the mystery and had a chat with the junior faculty member about his presentations, and about his future career at State U.

The discourse analogues of the logician's inconsiderations are fairly easy to see:
1) Where the logician uses words his students don't understand, a speaker or writer may do the same, or may, for example, use a proper name of a person, the significance of whom to the discourse the addressee cannot possibly know.

2) Where the logician irrelevantly speaks of his racehorse, so too may a speaker or writer make radical shifts in discourse topic, thus causing his addressee to lose track of what has been said in previous discourse. Consider this real passage from Herter and Herter 1972:21, passage (32):

   (32) The religions of the Mongols are Buddhism and Shamanism. The Buddhist monks do not marry. Many a white man has watched with awe as a group of Buddhist monks moved a goblet across a table by thought waves alone.

Pretty strange!

3) Where the logician makes use of suppressed premisses, the speaker or writer may make use of implausible or unexpected or even suppressed presuppositions. Consider again Hawkins' datum (27):

   (27) The postman brought us a box this morning. The glass was broken.

There is nothing logically wrong with (27), but the reader or hearer must be able to figure out that there was glass inside the box, no simple feat for a person who's not a mindreader or a critic of the Postal Service.

4) The logician leaves out a step in the proof. Similarly, the speaker or writer may leave out information that may seem obvious to him, but is not obvious to his audience, for example, in (33):

   (33) John is my best friend. Mary is a real creep, though.

without knowing, for example, that Mary is John's wife, the hearer or reader can become quite baffled.

5) Where the logician doesn't say how one step follows from another, a speaker or writer may fail to use a connective that makes explicit the relationship between two sentences. Thus, in (34):

   (34) John is my best friend. He irks me a lot.

without a connective like however or though, the hearer or reader begins to doubt his interlocutor's desire to communicate.
6) The logician may go into a subproof without notification to his class. Similarly, the speaker may go into a subdiscourse, which, while relevant to what is being talked about, is not marked in such a way that the hearer understands that a subdiscourse is being employed. Consider discourse (35):

(35) We were walking in the park and came upon a brook. Everyone began to cheer. Yesterday we had been in another park. We were getting really thirsty. We walked and walked and found no water fountain. So, when we came upon the brook today, we were naturally overjoyed. After cheering, we all jumped in.

Had the speaker simply added the sentence *There was good reason for this* after the sentence *Everyone began to cheer,* he would have alerted his listener that what followed was a subdiscourse, an explanation of why everyone cheered. As discourse (35) stands, we can only expect the listener to be miffed.

7) Just as the logician fails to remind his class of something proven the semester before, the speaker may fail to renotify his hearer of something that has been previously mentioned. So, in (36):

(36) Yesterday I rushed by cab to the airport and bought a book at the newsstand. It was getting near 3:00 and I had to scramble to catch my flight. I got to the gate just in time. The flight attendant ushered me to my seat and soon we were airborne. After cocktails, I opened the book and...(Hold on---what book?)

the listener has probably forgotten that the speaker has bought a book by the time the last sentence was uttered. The speaker would have been more considerate to have said something like *the book I bought at the airport newsstand* or some such.

8) The speaker or writer, like the logician, may use two different names to refer to the same object, and unless his addressee is aware that the two descriptions denote the same object or person, there will surely be a breakdown in communication, for example (37):

(37) My sister Sally did some funny things yesterday. She went to the amusement park with our niece Little Sue. Sue ran off somewhere and when her aunt found her, she got real mad at her.---(Whoa there, who's Sue's aunt? When did she get to the park?)---Sally is Sue's aunt, of course.
9) If the speaker or writer is talking about two persons named Narcissus, he must, like the logician, distinguish for his audience which Narcissus he is speaking about at any particular time.

10) The speaker or writer and the logician will equally irritate their respective audiences should they repeat information that is quite clear and well-understood, and previously stated. This is the opposite case of 7) where the speaker fails to repeat information necessary to comprehension.

The linguistic analogues of the logician's incorrect proofs are somewhat harder to get a handle on. Most of the analogues to logical mistakes 1) through 5) of page involve a syntactic realization of a semantics or pragmatics which either makes no sense, or does not express the sense that the speaker or writer wishes to express. Thus, example (29) clearly doesn't make any sense:

(29) Martha never bought a watch. It did have a gold watchband.

Sequence (29) is analogous to a logician using an invalid rule of inference, like going from \( \neg(\exists x)F(x) \) to \( G(\forall x)F(x) \).

In a sequence like (38):

(38) What did your dog eat yesterday?

*It was my dog that ate a can of Alpo.

there is something pragmatically anomalous about putting dog in the focus position of the cleft sentence when the information requested is about the dog's eating habits. It is not always clear when pragmatic contradiction is the source of a bad sentence. Consider sequence (39):

(39) What did your dog eat yesterday?

It was my crazy, voracious dog that managed to eat a whole can of Alpo yesterday—not just the Alpo, the can it was in, too. Boy was he ever sick after that.
The cleft sentence in (39) is somehow different from that in (38). The cleft in (39) is not being used just to answer the question like the cleft in (38). Rather, the speaker of the cleft sentence in (39) is using the question asked of him to make a startling statement about his dog. Note the phrase crazy, voracious dog. This cleft sentence is what I have previously called a 'funny cleft' in Kantor 1976, but which would be better termed an assertive cleft. Its function is not to answer a specific question, but rather to make a statement the speaker or writer wishes to make about something or someone.

A question-answering cleft, as in (40):

(40) Who stole the library books?

It was probably John that stole them.

is the traditionally described cleft sentence. The focus position following the It was is where the answer is typically placed. The that-clause contains a repetition of the information in the original question.

The function of the assertive cleft is quite different. In addition, the old information appears in the focus position, and the statement that the speaker wishes to make appears in the that-clause. When the assertive cleft is used in response to a question, it must contain news that is somewhat startling. Discourse (41) shows another example of this use, while discourse (42) shows how unstartling news cannot be used in responding to a question with the assertive cleft construction:

(41) What's your dog been up to lately?

It was my dog that dug up a corpse last Saturday that the police had been looking for.
What's your dog been up to lately?

*It was my dog that dug up three bones last Saturday.

Now note what has happened here. By characterizing the two different sorts of cleft sentences, I have established (albeit crudely) different pragmatic conditions of the use of the question-answering cleft and on the use of the assertive cleft. In discourse (38) with *dog in focus position, the cleft can only be understood as an assertive cleft, and since the content of the *that-clause is not very startling, the sentence is seen as pragmatically anomalous, and we would expect, would never be uttered except as a performance error. These data, then, like Bolinger's data on pronouns occurring on the left, are characterizable in terms of pragmatic conditions on the use of their structures in context, and not on the hearer's or reader's processing capabilities. In the next section, I will discuss briefly what the speaker or writer does know about the hearer's or reader's processing capabilities, and where this knowledge might come from.

1.4.4 The speaker's or writer's secondary competence

A clear speaker or writer is one who not only conveys his message in a non-anomalous way, but one who is concerned for his addressee's processing abilities, one who knows how to structure the discourse, one who knows how to construct referring expressions for maximum comprehension. I see a grammar for the speaker or writer having a component that accounts for his ability to structure the discourse, and for his choice of sentence structures and references, just in case those linguistic elements will likely interfere with comprehension.
The component of grammar I have just proposed is certainly a model of a secondary competence which speakers of a language acquire, probably late, and in degrees. For some, we would suspect, this secondary competence is quite lacking. The origin of this competence is not at all clear. My hunch is that this competence comes with high literacy.

With respect to writing, traditional rhetoric instruction is of course an attempt to teach just this kind of secondary competence, along with emphasizing the creative or inventive aspect of communication of ideas. (Winterowd 1975 is an excellent anthology of theory and practice of teaching composition for the linguist to look at.) The secondary competence in speaking, we may feel sure, is acquired much more easily and sooner. The exercise of this competence is insured, for in conversation, a speaker will receive feedback on his utterances and repair them appropriately. Keenan and Schieffelin 1976 discuss this role of feedback controlling the speaker's utterances. Their work will be discussed further in chapters 3 and 4.

In writing, of course, no immediate feedback is possible. Even if the writer reads what he has written, he may not perceive inconsiderateness, for he already knows the semantic content of what he is trying to communicate. The teacher's comments on what has been written will come after a time, but the writer must still come to understand what the teacher's objections are. So it should not be surprising that a secondary competence in writing is difficult to acquire, for it is not as unconsciously learned as is the secondary competence in speaking or conversing.
1.5 Discourse-based methodology

I return now to the topic of methodology and argumentation for discourse. We may view the methodology for discovering and accounting for anomalous discourses in the same general way as we have viewed syntactic methodology for 20 years now. We may ask speakers of the language to judge the anomalous or non-anomalous nature of sentences, and use our intuitions to do the same. We then use our insight and standard methods of argumentation to posit structures, conditions, constraints and rules, and test such findings for their predictive power. Clearly, when we enter the realm of pragmatic conditioning of syntactic structure, we will not be so concerned about rule ordering and formalization, but we will rather search for the very best descriptions and generalizations of the conditions on the existence of grammatical structures.

When we find discourses that are not anomalous but find at the same time that such discourses cause comprehension problems for the hearer or reader, we must use our insight to discover why these discourses are inconsiderate. We will use our own intuitions, and we will also question our informants about what caused them trouble, and from those responses (which must be interpreted and cannot be taken at face value), we hypothesize what causes the discourse inconsiderateness. Then we must alter the discourses in such a controlled way that they become appropriate, thereby bearing out our analysis of why they were inconsiderate to begin with. This, then, is the methodology that will be used here.
1.6 Summary

The difference between inconsiderate discourses and anomalous discourses is the difference between those discourses which admit of (albeit with difficulty) a correct interpretation of the speaker's or writer's message, and those discourses which either do not admit of an interpretation, or those which yield only an interpretation not intended by the speaker or writer. It is of course possible that a discourse may allow the proper interpretation, but because of the way in which it is read or heard, the addressee may take it to be anomalous. So, a sentence like She ran down the sink, meaning 'she berated the sink', might be taken by the addressee as a semantic anomaly about a woman running through a tiny drainpipe, which interpretation the addressee might take to be a reflection of the speaker's sanity. The sentence does, however, admit of a perfectly respectable non-anomalous interpretation.

Finally, we may assume that a speaker of a language has a linguistic competence such that he will not produce anomalous discourses, except as performance errors. Inconsiderate discourses, on the other hand, are often produced, as can be seen by repair sequences initiated in conversation, or by freshman composition essays, which may contain a plethora of inconsiderate data.

The distinction between anomalous discourses and inconsiderate discourses will be of crucial import when we review and discuss various discourse notions in Chapter 3. My findings on the comprehension of discourse connection, in the next chapter, will show some of the ways in which a discourse becomes inconsiderate.
NOTES

1 One would probably want to include signed discourses as well, but these do not come under study here.

2 for the same sentence type! Some languages might have SVO order for statements, but VSO order for yes/no questions.
CHAPTER II

THE COMPREHENSION OF PRONOUNS IN DISCOURSE

2.0 Introduction

In this chapter I will present a study of the comprehension of pronouns in discourse. I will claim here that the hearer's or reader's expectation of a reference to a noun or noun phrase is the key to the comprehension of a pronoun reference. In the next chapter, I will use the results of the study given here to critically evaluate what a number of other linguists have had to say about the nature of discourse and about some proposed discourse properties like given-new information, topic, definiteness, etc. Because I will need to make use of some of these discourse properties in this chapter, I will briefly discuss my conceptions of some of them here, and leave a fuller discussion until Chapter 3.

2.1 Preliminaries: discourse topic and discourse function

The first property of discourse I wish to discuss is the discourse topic. In my view, we can say that the speaker or writer has in mind, and the hearer or reader can come to understand from the discourse, the discourse topic, that is, what the discourse at any particular point is about. In addition to speaking of discourse topic, we can talk about the discourse function of the individual sentences (and even clauses) that make up the discourse. By discourse function of a sentence I mean the role of the sentence in the discourse. These terms, 'discourse topic' and 'discourse function', can be best understood by way of
looking at an example text, a passage from Ferguson and Bruun 1969:22, passage (43) below. I number the sentences for easy reference:

(43) 1) The disruption caused by the invasions, and the resulting power vacuum in the Middle East, presented opportunities which were exploited by two small but very important nations: the Phoenicians and the Hebrews. 2) The Phoenicians, as the Greeks called them, were a Semitic people, mostly of Canaanite origin, settled along what is today the Lebanese coast. 3) Taking advantage of the economic void created by the destruction of the Mycenaean maritime trade, they took to the sea and founded a commercial empire based on Tyre, Sidon and other coastal towns. 4) Although they had highly skilled industries, the Phoenicians were primarily merchants. 5) They sailed to every part of the Mediterranean world and by 800 B.C. had established trading colonies, some of which grew to be powerful cities, as far west as Carthage and Cadiz. 6) Their culture was borrowed largely from the Egyptians and Mesopotamians, but their contribution as disseminators of civilization throughout the Mediterranean was extremely important. 7) It was through them that the alphabet was introduced into Europe and spread throughout the Middle East, replacing the cumbersome cuneiform and hieroglyphic scripts. 8) They did not themselves invent the idea. 9) Earlier experimental alphabets can be dated back several centuries. 10) But the Phoenician alphabet, using only twenty-two signs, each representing a consonantal sound, was so simple and easily learned that it was widely adopted. 11) The Greeks founded their own alphabet upon it and, directly or indirectly, it has fathered most of the alphabets of Western civilization. 12) Of still greater importance for their influence on Western civilization were the Hebrews, who lived to the south of the Phoenicians...

Sentence 1) has two functions, first to link up with previous discourse, and secondly, to introduce a major topic, the Phoenicians and the Hebrews. Sentence 1) is then a topic sentence. Sentence 2) is also a topic sentence which restricts our attention for the time being to a single topic, the Phoenicians. Sentence 3) is yet another more embedded topic sentence which introduces a more refined topic, which might be characterized as 'the Phoenicians and their commercial empire
of the seas'. Sentence 4) serves as an example or comment sentence about the commercial empire. Sentence 5), too, is an example or comment sentence relating to the topic introduced by sentence 3). Sentence 6) is a new subtopic sentence, introducing the topic 'Phoenician dissemination of culture'. Sentence 7) has two functions. It is an example sentence of the Phoenician dissemination of culture, but it also serves to introduce a new subtopic, the alphabet. Sentence 8) completes the introduction of the subtopic. Grimes 1975:64-5 says that sentences like 8) contain collateral information, which 'relates non-events to events'. This has the effect of foreshadowing an actual event. So in this case, the collateral information in sentence 8) has the effect of establishing 'alphabet' as topic. Sentence 9) is a comment about alphabets and sentence 10) is a further comment. Sentence 11) is a comment or example upon 10). Finally, sentence 12) is a major topic sentence changing the topic to the Hebrews.

I will discuss these discourse functions and the notion discourse topic in much greater detail in Chapters 3 and 4 below.

2.2 Personal pronouns

I begin with a quote from Halliday and Hasan 1976:45 on the nature of personal pronouns:

The significance of the person system is that it is the means of referring to relevant persons and objects, making use of a small set of options centring around the particular nature of their relevance to the speech situation. The principal distinction is that between the persons defined by their roles in the communication process, on the one hand, and all other entities on the other. The former we shall call speech roles; they are the roles of speaker and addressee. These are the two roles assigned by the speaker; and we use 'addressee' in preference to 'hearer' or 'listener' in order to suggest the
meaning 'person designated by the speaker as recipient of the
communication'— as distinct from one who chooses to listen or
happens to hear. The latter, which we shall call simply
other roles, include all other relevant entities, other than
speaker or addressee. In terms of the traditional categories
of person, the distinction is that between first and second
person on the one hand (I, you, we) and third person on the
other (he, she, it, they, one).

My major interest in this chapter will be with the comprehension of
these personal pronouns. Problems of comprehension of pronouns re-
ferring to speaker or addressee will not occur much in face to face
conversation, and in writing, first and second pronouns are not often
seen, at least in expository discourse.\(^1\) Since my major concern is
with expository written texts, it is the third person pronouns that I
will treat in detail here. We get, besides the subject pronouns above,
the oblique pronouns (him, her, it, them, one) as well as the posses-
sive adjectives or determiners (his, her, its, their, one's) and the
possessive pronouns (his, hers, theirs). The singular pronouns he,
her, and it, along with their oblique and possessive counterparts are
semantically distinguished by gender.\(^2\) The plural pronouns are un-
distinguished for either animacy or gender.

These third person pronouns typically refer to some lexical noun
or noun phrase in the preceding discourse. Postal 1969:206 gives
sentences (44) and (45) to illustrate this point:

\[(44)\] Max's parents are dead and he deeply misses them.
\[(45)*Max is an orphan and he deeply misses them.\]

where we can see that while the meaning of 'orphan' includes the idea
that one's parents are dead, the reference by the pronoun them to
'Max's parents' in (45) is impossible, because there is no lexical noun
phrase to which them refers as there is in (44).

The pronoun it is rather special in that this pronoun, according to Halliday and Hasan 1976:52, 'may refer not only to a particular person or object, some entity that is encoded linguistically as a "participant"—a noun or nominal expression—but also to any identifiable portion of a text'. So, the pronoun it may refer to some process or some fact mentioned in the previous discourse, for example, (46) and (47):

(46) Gwen walked in to town to the store. It was a long trek.
(47) A buffalo is a bovine. Do you believe it?

2.2.1 Why pronouns?

It should not be surprising that personal pronouns are for the most part restricted to reference to textual lexical items. After all, aside from expressing number, and in the singular, animacy and gender, the personal pronouns are semantically quite empty. But if they are so empty, why are they used? Zwicky and Kantor (to appear) note that for language to be usable, 'it should take place on a time scale suited to human beings, in particular...a very wide range of complex messages should be communicable in quite short stretches of time (no more than a few seconds'. Deletions, pronominalizations (pro-ings), reduction of clause structure, and insertion of lexical items, are the mechanisms in language which we claimed satisfy the brevity function of language.

Among the other functional considerations that a language must satisfy is perceptibility, that is, a language must be able to be understood; it must be suited to human processing capabilities. Now brevity itself aids comprehension or perception in that if a message
or sentence is too long, the first part of it may be forgotten before the last part of it can be understood and related to the first part. On the other hand, the desire for brevity may be attained with a concomitant loss of information, thus hindering perceptibility. This is exactly the problem that may arise with the use of personal pronouns. The pronouns save time, it is true. But with the precious little information they contain, the chances of there being perceptual problems in figuring out their referents is greatly increased.

My major thrust in this chapter, then, will be to investigate the conditions under which pronoun comprehension is impaired. Since the use of pronouns involves co-reference, it will be most helpful to look at the same time at co-reference by other means, namely, by means of the definite determiner, by means of the demonstrative pronoun and by the demonstrative determiner. We will find a number of parallels and a number of differences among each of these types of coreference devices.

2.3. Data not considered

In this section I will present three kinds of discourse sequences that will not figure in further discussion. The first kind of sequence I wish to rule out from my study is the pragmatically anomalous type in which a pronoun is used when no discourse referent exists. Example (29) from Chapter 1:

(29) *Martha never bought a watch. It did have a gold watchband.

is typical of this kind of sequence.
As a second kind of data I wish to rule out of this study, consider now discourse (48):

(48) Rome's expansion left her with a sizable overseas empire. This situation inevitably had repercussions on the social and economic life of the Roman people. Wealth flowed to Rome from the plunder and tribute of the provinces, greatly increasing both public and private capital. It was not, however, invested in new industry or commerce, so that there was less change in the character of Roman economy than might have been expected.

Here we find trouble processing the sentence beginning It was not. This sentence leads the reader 'down the garden path', for its structure is initially like that of an extrapoosed sentence with a dummy non-referential it, like in (49):

(49) It was not, however, obvious that Rome would be able to absorb so much new wealth without a basic change in her monetary policy.

The last sentence of (48) is not a classic 'garden path' sentence, but it comes close.

Bever 1970 presents sentences like (50) and (51):

(50) The horse raced past the barn fell.

(51) The door slammed during the storm splintered.

in which the hearer processes the underlined sequences as the main clauses of the sentences and so has difficulty reprocessing the sequences as noun plus reduced relative when the main verb appears. The hearer erroneously closes his processing after the last word of the underlined sequences.

Now the reader of the last sentence of passage (48) does not have trouble because he has closed off his processing at the word however, but the processing he goes through in misperceiving that
sentence is similar to the process he goes through for garden path sentences. In (50) and (51) above, the hearer understands *raced* and *slammed* as main verbs rather than as perfect participles from relative clauses in the passive voice, that is (52) and (53):

(52) The horse *that was raced past the barn* fell.

(53) The door *that was slammed during the storm* splintered.

In (48), a *structural misperception* also takes place. It in (48) is taken as the dummy-its* of extraposition and *was* is processed as the verb that always goes with predicative adjectives. In each of the cases given, (48), (50), and (51), a particular string of words is taken to be derived from a structure that was not the intended structure of the speaker or writer. By the time the reader or hearer realizes that he has perceived the structure of the sentence incorrectly, he must stop and reread the sentence or ask for it to be repeated so that he may reprocess it.

Note that none of the structurally misperceived sentences are anomalous in the way that example (29) is, where there is no discourse referent. Further, neither the last sentence in (48), nor (50) nor (51) is ambiguous if the entire sentence is considered. The speaker or writer is communicating his message unambiguously, although he may not realize that a part of his message may be misperceived because of a partial structural ambiguity.

A third type of sequence, which occurs in inconsiderate discourses, is one in which pronoun comprehension is impaired when drastic ambiguity of the sort in example (54) occurs:
(54) John₁ and Jim₂ went into town. He₃ needed a haircut badly.

This kind of ambiguity is quite different from the structural ambiguity just discussed. Here we have ambiguity on the lexical level, rather than the syntactic level. The pronoun he of the second sentence of (54) is solely responsible for the ambiguity. Structurally ambiguous sentences like the classic (55):

(55) Visiting relatives can be a nuisance.

are ambiguous by virtue of the fact that two distinct semantic structures with different grammatical relations obtaining among the elements of the two structures can come to have the same surface word order (and sometimes the same surface constituent structure). The different relations among the elements in the two understandings of (55) can be more readily seen by paraphrases of the two meanings, as in (56) and (57):

(56) Relatives who visit can be a nuisance.

(57) It can be a nuisance for one to visit relatives.

Lexical ambiguity, on the other hand, obtains when a lexical item in a sentence can have more than one meaning or more than one referent, while there is no difference in the grammatical relations among the sentence elements. So, a sentence like (58) is lexically ambiguous because the verb bear can mean either 'tolerate' or 'give birth to':

(58) My sister can't bear children.

With reference to example (54) above, I have not used the term 'lexical ambiguity', but rather 'drastic ambiguity'. Drastic ambiguity
refers to cases in which either of two possible understandings of a sentence is equally possible, or where one understanding, the wrong one according to the speaker's or writer's intent, is more readily interpreted by the addressee. Anyone who looks through a text can find numerous cases in which a pronoun potentially refers to more than one noun phrase. Yet the potentiality is usually far from the reality. Come examples from Ferguson and Bruun 1969:

(59) During an otherwise unimportant war in Africa against the Numidian king Jugurtha, the army had been re-organized by Marius, the democratic consul for 107 B.C. Instead of drafting the property-owning citizens as was the ancient custom, he recruited a volunteer army composed mostly of landless men. (p. 56)

(60) In Germany, during this period, the kings were more successful than elsewhere, gradually gathering the reins of government into their own hands and suppressing the great nobles. In the second half of the tenth century, they extended their rule to Italy.... (p. 163)

(61) What Plato sought to discover...were the eternally valid "ideas", of which individual actions or things are but imperfect manifestations. These ideas, for example, the idea of man or horse as distinct from individual men or horses, he thought to have a real existence and to be the only perfect realities. They were the "universals" which so profoundly influenced the thought of medieval schoolmen. (p. 139)

In (59) the pronoun he is understood to refer to Marius, and not Jugurtha. In (60) they can only go with the kings, not the great nobles. In (61), the pronoun they of the final sentence refers to ideas, not realities.

Ambiguity is a concept that linguists have made much of. Yet when linguists look at ambiguity, they quite typically look at sentences in isolation. It is certainly true that sentences like Visiting relatives can be a nuisance are ambiguous in isolation. In context, however,
such sentences are rarely misinterpreted. A reader or hearer, wanting to make sense out of a discourse, will ordinarily retrieve only one meaning of a potentially ambiguous sentence, and that meaning will usually be the correct one. Only cases of drastic ambiguity or of partial structural ambiguity will in general lead to comprehension difficulties.

2.4 Forgetting referents

In this section I will discuss a parallel between comprehension of reference with the definite article and the comprehension of a pronoun reference. Recall the example of inconsiderateness (36) from Chapter 1:

(36) Yesterday I rushed by cab to the airport and bought a book at the newsstand. It was getting near 3:00 and I had to scramble to catch my flight. I got to the gate just in time. The flight attendant ushered me to my seat and soon we were airborne. After cocktails, I opened the book and...

The problem in (36) was that the listener or reader might well have forgotten that the speaker or writer had bought a book in the airport. Quite a few events are described between the time the speaker describes himself buying the book and the time he describes himself reading the book. Because of this, a qualifying phrase must be added to the noun phrase in order for the listener to comprehend the forgotten referent. So, a relative clause like the book I had bought in the airport would be much more comprehensible in the last sentence of (36). The case is naturally similar with pronoun reference, except that the time span may be even shorter when comprehension difficulties set in. But time is not all that is involved.
The specific claim I want to make here is that pronoun comprehension is impaired when there is a change in topic from that topic which is represented by the pronoun, or at least associated with that pronoun. Compare discourses (62) and (63):

(62) ...So far as Hannibal's own part of this plan was concerned, his hopes were realized. In one battle after another he defeated the Romans, finally wiping out almost the entire Roman army at Cannae in 216 B.C. But Rome's Italian allies failed to live up to his expectations. They remained stubbornly loyal to Rome. As a consequence, he was forced to deal with them harshly, and in 213 B.C. he crushed the combined allied armies outside of Rome.

(63) ...So far as Hannibal's own part of this plan was concerned, his hopes were realized. In one battle after another he defeated the Romans, finally wiping out almost the entire Roman army at Cannae in 216 B.C. But Rome's Italian allies failed to live up to his expectations. They remained stubbornly loyal to Rome. During the next few years the Roman army, under the leadership of Quintus Fabius, adopted the exasperating policy of refusing open battle, so that he was forced to waste his strength in futile maneuvers.

Discourse (62) is immediately comprehensible for most. In discourse (63), however, even though the pronoun he in the last sentence does not produce any drastic ambiguity, this reference to 'Hannibal' is not as immediately comprehensible.

And consider now discourse (64):

(64) ...So far as Hannibal's own part of this plan was concerned, his hopes were realized. In one battle after another he defeated the Romans, finally wiping out almost the entire Roman army at Cannae in 216 B.C. But Rome's Italian allies failed to live up to his expectations. The consuls of Rome aroused their resistance. As a consequence, he was forced to deal with them harshly, and in 213 B.C. he crushed the combined allied armies outside of Rome.

The pronoun reference to 'Hannibal' in the last sentence of (64) is
harder to comprehend than that in the last sentence of passage (62). Distance from the previous reference would not appear to be the confounding factor, for the intervening (second to last) sentences in both discourses (62) and (64) are both simple (as opposed to complex). Both the sentence They remained stubbornly loyal to Rome and the sentence The consuls of Rome aroused their resistance are SVO in structure, and of the same length, approximately. The sentence in (62) contains ten syllables and that in (11) contains eleven syllables. The difference in the comprehension of the pronoun he of the final sentence in the two discourses seems to revolve around the effects of the differences of the second to last sentences, something about the way in which readers process these two sentences with respect to the previous discourse. The sentence in discourse (64), The consuls..., completes a change in topic away from 'Hannibal' in a way in which the sentence They remained of (62) does not. Perhaps the introduction of more new information, that about the existence of 'consuls of Rome' causes this.

I have not investigated this aspect of pronoun comprehension further, so these data can only be suggestive. However, I should not leave this topic without showing that it is also possible for a great distance to be present between a pronoun and its referent without there being difficulty in comprehension. For example, passage (65) from an actual text which Halliday and Hasan 1976:14 relate:
The first years of Henry's reign, as recorded by the admiring Hall, were given over to sport and gaiety, though there was little of the licentiousness which characterized the French Court. The athletic contests were serious but very popular. Masques, jousts and spectacles followed one another in endless pageantry. He brought to Greenwich a tremendously vital court life, a central importance in the country's affairs and, above all, a great naval connection.

In this discourse, the text continues to be about 'Henry's reign', and, as a consequence, the reader can still process the pronoun reference he in the last sentence of the discourse, unlike the cases of the pronoun he in (63) and (64) above.

It has been shown here that the nature of intervening material plays a role in the comprehension of reference in general and pronouns in particular. A comparison of the discourses in this section points up the need to look at the discourse as a whole, including information like what the discourse is about and what the relevance of one part of a discourse is to another. This suggests further that a sentence sequence grammar, that is, a grammar that operates on conjoined sentences and does not consider any higher level discourse structures, will be insufficient to account for inconsiderate discourse phenomena. There is, for example, no accounting by sentence structure or by number of words for how far removed from its referent an unqualified noun phrase or pronoun can be and still be comprehended. The suggestion that we need a discourse grammar, one that does take into account higher level structures and information, will be much more strongly supported in the following sections where I discuss problems connected with adjacent pronoun reference.
2.5 On making judgments of comprehension

It must be conceded that each hearer or reader is different in his or her comprehension abilities, depending on time of day, attentiveness, and for a multitude of other possible reasons. Consequently, the reader of this dissertation may not always agree with the judgments given here. This is a problem that has always been with us in linguistics, at least since the days when linguists have concentrated their attention on description rather than prescription. Reaching agreement on whether or not a sentence is grammatical is difficult enough. But here, the judgments are for the most part made on whether a passage is immediately comprehensible or not. I myself have certainly found difficulties in agreeing with other authors' judgments. For example, Halliday and Hasan 1976:55 give the sequence (65):

(65) You really ought to ask Sally not to tell a story like that to all those friends of hers if she thinks they might be going to be working with John, unless she can be quite sure its not going to go any further. I hardly think it would appeal to his sense of humour.

Halliday and Hasan argue that the referent of a pronoun may be very deeply embedded in a complex sentence and still be identified. Yet I and others I have asked had difficulty in immediately identifying 'John' as the referent of his of the second sentence. So, we must live with the fact that there will be disagreement.

My presentation is handicapped to the greatest degree by the fact that a number of similar passages will be given, with the result that the reader here will know in advance what particular noun phrase is to be pronominalized. So, a reader might have found comprehensible the
pronoun he in the last sentence of discourse (64) of the last section because the preceding two discourses were similar to (64), both involving the pronominalization of Hannibal. There is, unfortunately, no way to avoid this problem in my presentation.

The judgments given here are those given by a group of linguistically sophisticated informants (I was one of them). What I will do in the following subsections is to look at some judgments about the comprehension of pronouns, in particular, pronouns occurring in sentences adjacent to sentences in which their referents are physically realized.

2.6 Comprehension of adjacent pronoun reference

I mean here to examine some of the factors that determine whether or not a pronoun can be comprehended in a sentence immediately following a sentence in which there occurs a noun phrase to which that pronoun refers, schematically as in (66):

\[ (66) \text{g[...NP}_1\text{...]}_g = \text{g[...PRO}_1\text{...]}_g. \]

As I mentioned in section 2.2.1, pronouns contain very little semantic information. Because of this fact, we may assume that a reader will be able to comprehend a pronoun only if the referent of the pronoun is quite readily clear. But we must, I believe, go even further than that. Reference with a pronoun, I claim, must be expected, or at the very least be considered plausible, by the reader in order for him to easily comprehend the pronoun reference. I will propose, then, in the following subsections, various factors that set up or hinder the reader's expectation of a reference.
I will also claim that a reader may have varying degrees of expectation. At the highest level, the reader will expect a reference to a noun or noun phrase from the preceding sentence. At a lower level, the reader will expect or find plausible a pronoun reference as part of a larger expected or plausible proposition in which the pronoun is contained. At yet another level lower, the reader will comprehend a pronoun reference only when there is a structural and semantic parallelism between the sentence containing the referent noun or noun phrase and the sentence containing the pronoun reference.

The preceding paragraphs contain a few terms which have not yet been defined. I want to stop here and define these:
(a) *Expectation* refers to the reader's anticipation of what will come next in the text. That readers do have expectations can be shown quite easily. I gave to four cohorts, one sentence, a paragraph-initial sentence, (67):

(67) Like Charlemagne before, Otto kept an interested eye on Italy.

I then asked my four informants to write down 'two distinct continuations of the paragraph'. Here are their responses:

Ia  It had long been established that Italy was a center of foment and rebellion.

Ib  He was anxious to grasp any opportunity to establish influence in that rich and urban merchant center of the Mediterranean.

IIa  The Italians were continuously raiding the southern borders of his empire, so Otto was constantly subduing their insurrections.
IIb Otto was intrigued by the Italian wealth of culture and access to the Mediterranean propagating on this his southern border. He hoped to add this land to his empire.

IIIa He was waiting for the right moment to move in and take over.

IIIb His scouts had warned him that the peasants were in the process of revolt.

IVa He watched carefully, waiting for chances to influence the Italian economy.

IVb Italy had been a fomenting spot for revolution and Otto wanted to make sure that potential was not realized.

There is surprisingly little breadth among the various continuations given here. All of the responses have to do with:

1) Otto's desire for conquest or economic influence over Italy (Ib, IIb, IIIa, IVa).

or 2) Italy's potentiality or reality for unrest and Otto's concern about this (Ia, IIa, IIIb, IVb).

We will find that expectations may be broader or narrower than those that we find here. This depends to the greatest extent on context. Nonetheless, the agreement among the continuations given above is striking and provides good support for talking about reader expectation.

(b) Plausibility is a term I use to refer to the reader's or hearer's ability to accept or comprehend something that is not expected, but which is also not unexpected. Thus, a hearer or a reader has no trouble understanding a sequence like (68):

(68) John is a good friend of mine. His wife, though, is my mortal enemy.

even though the speaker or writer never explicitly states that John has
a wife. Note that it is possible for the speaker or writer to state just that, as in (69):

(69) John is a good friend of mine. But he's got a wife who's my mortal enemy.

As something becomes more implausible, an actual statement of introduction is needed to ensure comprehension. Compare (70) in which there is no introduction with (71) in which there is:

(70) John is a good friend of mine. His boa constrictor is my mortal enemy, though.

(71) John is a good friend of mine. But he's got a boa constrictor that's my mortal enemy.

(c) **Parallelism** is a term that must be subdivided along at least three dimensions:

1) **Semantic parallelism** has to do with a series of sentences, each fulfilling the same discourse function. So, in a sequence like (72):

(72) I have three rubber balls. The first one is red. Green is the color of the second.

there is a semantic parallelism between the second and third sentences. They each describe one of the rubber balls. Because of this parallelism, the reader expects the third sentence to be about the color of the third ball. Semantic parallelism will be shown to be involved in what I call 'negative expectation' (see section 2.6.4 below).

2) **Syntactic or structural parallelism** has to do with identity or similarity of sentence structures in a sequence of sentences. I will have more to say about this kind of parallelism in section 2.6.5.3 below, where I discuss cases in which there is a conflict between structural parallelism and semantic parallelism.
3) Thematic parallelism is the name I give to a phenomenon shown by Halliday and Hasan 1976:310-312. Here Halliday and Hasan claim that if a pronoun has more than one possible referent, its most likely referent will be the theme (see section 3.2) of the previous sentence. They give sequence (73):

(73) These ponies the children were given by their grandparents. Have you seen them?

and state that the pronoun them of the second sentence 'seems more likely to refer to these ponies because ponies is the theme of the previous sentence.

(d) Lastly, the term 'factors'. Factors is a term I will use to describe what about a discourse aids or hinders expectation or plausibility, and hence what aids or hinders the comprehension of pronouns. For example, I will say that the factor of negative expectation caused by a semantic parallelism will hinder the comprehension of a pronoun reference. Or, I will say that a factor of syntactic parallelism may aid in the comprehension of a pronoun reference even when reference is unexpected. Factors, then, are perceptual notions, facts about the discourse or discourse structure which have an effect on the hearer's or reader's processing abilities.

I spoke in Chapter one of the speaker's or writer's secondary competence, which would include his knowledge of what factors will aid or hinder his addressee in understanding a pronoun reference. The speaker or writer, having come to understand these factors, will form from such factors conditions on his use of pronoun reference. 'Conditions' is a term usually associated with grammatical rules, and I use this
term also in connection with rules of considerateness. These rules
will be discussed in Chapter Four.

2.6.1 Great expectations

I claim that a pronoun reference will be best comprehended when
the reader or hearer is expecting an unrestricted reference to the
noun or noun phrase to which that pronoun refers. By unrestricted
reference I mean that the hearer or reader has high expectations that
the sentence to come will be about some particular textual noun or
noun phrase, but he has no particular expectations regarding the con-
tent of that sentence—that is, virtually anything the reader or
hearer finds out about that noun phrase will be plausible and compre-
hensible.

In English there are a fair number of idiomatic sentences or
expressions whose sole function is to introduce discourse topics.
Sentences like:

(74) Remember Mona?
(75) Now as to Pine Valley.
(76) I'm going to talk now about Center City.
(77) There once was a girl from Nantucket.
(78) Recall the story we talked about yesterday.

all seem to demand continuation of the persons, things, places they
introduce. Note the strangeness of sequence (79):

(79) Remember Nick? I just saw Erica the other day.

In this sequence there is no mention of 'Nick' in the second sentence.
As a consequence, the sequence seems quite odd.
Continuations of sentences like (74) through (78) may vary over a wide range as long as they are about the noun or noun phrase introduced. And when the noun or noun phrase is introduced, there is indeed a great expectation that the next sentence will be about that noun, so the pronoun is easily understood. Consider (80):

(80) Remember Philip?
   a) Nick is dating his ex-wife Erica now.
   b) He got shot trying to save a boy's life.
   c) The boy who Tara says he saved is shooting up heroin now.
   d) One of the things I hate about him is that he's always been such a goody-goody.
   e) Tara told Phoebe that she's going to have him tell Little Philip the truth.

and so on. Note that it is not necessary that a pronoun reference follow these introductory expressions--full noun phrases will of course do just fine, for example (91):

(91) Remember Jason? Well, Jason is dating Nola now.

The important point here is that the hearer or reader will expect a reference to the noun or noun phrase and hence will not have any trouble comprehending pronoun reference in these contexts.

2.6.2 Semi-great expectations

A reader or hearer who perceives a sentence to be a topic sentence in a discourse has the expectation that succeeding sentences will relate to that topic. Now topic in English, as I have claimed in section 2.1, does not necessarily coincide with a textual noun or noun phrase. If, however, the reader or hearer perceives from a topic
sentence a particular noun or noun phrase as topic, then he expects a reference to that noun or noun phrase to follow. Hence, he will again have little trouble comprehending a pronoun reference to that topic in the sentence immediately following the topic sentence. So, when we read a paragraph-initial sentence like (82):

(82) Throughout the twelfth century the church had made fitful efforts to suppress heretics but it was Innocent II who first devoted the full authority of the papacy to the task of destroying these enemies of the faith.

we certainly do have expectations that the next sentence will be about 'Innocent III', and we have no trouble understanding the pronoun in the immediately succeeding sentence, (83):

(83) In 1207, he summoned the chivalry of Europe to take part in a crusade against the Albigenses.

2.6.3 A caveat

Even if the hearer or reader knows what noun or noun phrase will be topic, he will still have trouble comprehending a pronoun reference if he does not have enough information concerning that topic. Consider a paragraph beginning like (84):

(84) While the Tartar power was fading in Russia, eastern Europe was being menaced from the south by the advance of another group of people of Asiatic origin. They were originally nomads who, like the Seljuk Turks of an earlier time, had drifted westward from central Asia and had adopted Islam.

Here, while the hearer or reader does expect the paragraph to be about 'the people of Asiatic origin', there is a prior expectation, a more fundamental one, that this group of people will be identified before they are commented upon. This is why the pronoun they of the second sentence of (84) is not easily comprehended. If the pronoun had
instead made reference to the identification of these people, then it would have been comprehensible—for example in (85):

(85) While the Tartar power was fading in Russia, eastern Europe was being menaced from the south by the advance of another group of people of Asiatic origin. Their name escapes us, but we do know that they were originally nomads....

The actual continuation of the discourse was (86):

(86) While the Tartar power was fading in Russia, eastern Europe was being menaced from the south by the advance of another group of people of Asiatic origin. The Ottoman Turks were originally nomads....

which completes the identification of 'the people of Asiatic origin.

Had the writer identified the group of people in the topic sentence by an appositive phrase or restrictive relative clause like in (87):

(87) a. another group of people of Asiatic origin, the Ottoman Turks

b. another group of people of Asiatic origin whose name eludes us

then the identification is complete. The hearer or reader then has the high expectation that the following sentence will go on to comment about this group of people, and a pronoun reference like that given in the second sentence of (84) will be comprehensible.

Now as I mentioned at the beginning of section 2.6.1, not all topic sentences are perceived by the hearer or reader to be about one particular noun or noun phrase. I will postpone discussion of these topic sentences until section 2.6.5.2, where I will also discuss sentences that are not topic sentences. This section, and the ones before it, have been about hearer or reader expectations of the highest
degree, and so about factors that lead to maximal pronoun comprehension. I will turn now to factors that hinder or completely block pronoun comprehension before discussing the more complicated intermediate cases.

2.6.4 Negative expectation

Consider now discourse (88):

(88) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. They were built originally for the army but served the merchant class as well. Over them messengers of the imperial service, equipped with relays of horses, could average fifty miles a day.

It usually takes a re-reading of the passage to figure out that the pronoun they in the sentence beginning They were built refers to roads mentioned in the previous sentence. When informants were asked why they were not able to comprehend the pronominal they, they were not able to give a good reason. Some responded initially that the pronoun reference was ambiguous, but did not maintain that position after looking at the passage again. When I asked the informants to make up a continuation of the passage after considering only the first three sentences, they unanimously responded that they expected a sentence about some other fact which eased or secured communication within the empire.

My explanation of the comprehension difficulties is that in discourse (88), the reader is expecting the sentence after skillfully designed roads to be about something other than 'the roads', namely some other fact about easing or securing communication. The
generalization that I believe can be drawn from data like (88) is that the comprehension of a pronoun in a sentence is impaired when the reader expects that sentence to be about something other than the referent of the pronoun. In discourse (88), this expectation is set up by a semantic parallelism. That is, the second sentence of (88), The imperial fleet..., is an example of how communications were secured, and the third sentence, In each province..., is another example of easing the communications. So, the reader has the expectation that the fourth sentence will be yet another example of easing or securing communications, and he is baffled when it is about roads instead, where reference to roads is pronominal. In the next section, I will show how the writer can remedy this confusion.

It is interesting that the author can to some extent control the processing of the function of a sentence by use of punctuation. So, consider discourse (89), which is identical to discourse (88) except for the use of a semicolon instead of a period:

(89) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads; they were built originally for the army but served the merchant class as well; over them, messengers of the Imperial service, equipped with relays of horses, could average fifty miles a day.

In discourse (89), the pronominal they reference to 'roads' is clear. The semicolon serves as a signal that what is to come next is connected not to the preceding discourse as a whole, but rather to the immediately preceding sentence. And since the preceding sentence is
considered on its own, rather than in light of the whole discourse, the pronoun reference is not so unexpected.

2.6.4.1 A remedy for negative expectation

Before leaving the topic of negative expectation, I would like to briefly show how this factor becomes involved in the comprehension of fully lexical noun phrases. Consider now discourse (90):

(90) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. The roads were built originally for the army but served the merchant class as well. Over them, messengers....

The phrase the roads in the second to last sentence, while not being totally incomprehensible, is to most readers not immediately comprehensible and rather irritating. Most readers find the reference easiest to process when the demonstrative determiner or pronoun is used, so that the passage reads as in (91):

(91) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. These(roads) were built originally for the army but served the merchant class as well. Over them, messengers....

The demonstrative reference can be seen as providing more of a tie to the preceding sentence than the reference with the definite article.

We have, I believe, three degrees of reference possible according to schema (66):

(66) $s[....NP_i....]_S \quad s[....NP_i....]_S$

a pronoun reference, a reference with a definite article, and a
demonstrative reference. If there is expectation that the second sentence will be about \( NP_1 \), a pronoun reference will likely be comprehensible. If there is strong expectation that the second sentence will not be about \( NP_1 \), then even a reference with a definite article will likely fail, and only a demonstrative reference will provide enough semantic information for the reader to make the coreferential connection.

The extra semantic tie that the demonstrative adds is the tie of verbal pointing according to Halliday and Hasan 1976:57. The use of the demonstrative to mark unexpected information can be seen in other cases too. Consider (92):

(92) Johnny Carson presented a startlingly good special last night on NBC. The celebrity tennis player brought out as his first guest former Wimbeldon champion Arthur Ashe.

The phrase this celebrity tennis player would have been much preferable to the phrase with the definite article in the second sentence. I claim that the demonstrative is more comprehensible because it forces the reader to make a coreferential link which is not very obvious. Note that had the phrase the comic been used as the subject of the second sentence of (92), there would have been no problem making the coreferential connection, since it is generally known that Carson is a comic.
Now consider discourse (93):

(93) Despite the fact that mathematics was born of Greek philosophy, mathematicians have been extremely scornful of all philosophic speculation. Mathematicians are in their chosen fields like mighty rivers. Their power has enabled them to penetrate deeply below the surfaces they started to explore but has also enclosed and entrapped them in high walls over which they cannot see. The disdainful mathematicians overlook the fact that the deepest and mightiest rivers are continually fed by tenuous, vaguely defined clouds.

Here the phrase the disdainful mathematicians in the final sentence gives some trouble. To be sure, the reader is expecting the discourse to continue to be about 'mathematicians'. Yet the phrase as given with the definite article causes the reader trouble for he thinks he has missed a previous characterization of mathematicians as 'disdainful'. Note that semantically, the notion that mathematicians are disdainful is new to the discourse. The last sentence is paraphrasable by These mathematicians, who are disdainful, overlook the fact.... The demonstrative These in place of the definite The in (93) would have marked the unexpected information, making the connection more comprehensible.

2.6.4.2 Subject position

Subject position in English seems to be a syntactic position to which a noun phrase may be easily found to be coreferential. So, while in (90) above, reference to roads with the definite article was difficult to comprehend:

(90) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman Emperor repaired or constructed a number of skillfully designed roads. The roads were built originally for the army but served the merchant class as well. Over them, messengers....
if the phrase a number of skillfully designed roads is in subject position in the preceding sentence, the definite referring phrase is far more comprehensible, as in (94):

(94) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province a number of skillfully designed roads were repaired or constructed by the Roman emperor. The roads were built originally for the army but served the merchant class as well. Over them, messengers....

In (90), there is parallelism in semantic structure, thus setting up the expectation that the paragraph will all be about easing and securing communications within the empire. In discourse (94), while the semantic parallelism is still maintained, the syntactic parallelism of the last two sentences allows comprehension of the definite referring phrase the roads. Note that the semantic parallelism, which sets up the negative expectation, is too strong to allow immediate comprehension of the pronoun they, as in discourse (95):

(95) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province a number of skillfully designed roads were repaired or constructed by the Roman emperor. They were built originally for the army but served the merchant class as well. Over them, messengers....

Here with the syntactic parallelism, identical subject followed by passive verbs constructed, built, still the pronoun they of the second to last sentence can not be immediately comprehended. In section 2.6.5.3, I will show how the syntactic parallelism can be further strengthened so that a pronoun reference will be comprehensible.
2.6.5 The intermediate cases

In the next three subsections I will discuss more complicated cases of factors affecting pronoun comprehension. Between unrestricted positive expectation and negative expectation there lies a range of other discourse situations. These range from restricted expectations, those expectations about propositions rather than a single noun or noun phrase, to plausible identifications to forced identifications. By plausible identification I mean something which is not expected, but is perceived because it jogs the reader's memory when he is searching for something to jog it. Forced identification of a pronoun referent will occur in situations where a negative expectation is set up and a very constrained syntactic and semantic structure is used to counteract the negative expectation.

My use of the term 'plausible' is slightly different from the normal use. In discourse (68):

(68) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. They were built originally for the army...

the statement about roads in the final sentence is perfectly plausible in terms of discourse coherence to the hearer or reader, but the pronoun reference is incomprehensible because the reader has a negative expectation with respect to 'roads'. I use plausibility here with reference to the comprehension of a pronoun in particular, and not to the comprehension of a sentence in general. Plausibility will be used to refer to what jogs the memory rather than what, having been
processed fully by the memory, can be said to be coherent.

If we place all of the previous categories and these new categories on a scale of ease of pronoun comprehension, the scale looks something like:

unrestricted ... restricted ... plausible ... forced ... negative
expectation expectation identification identif. expectation

Below I will discuss the middle three possibilities.

2.6.5.1 Restricted expectation

Consider now discourse (96):

(96) The next two emperors, wiser than the erratic Otto III, turned their attention to the slow and difficult task of rebuilding royal authority in Germany and reestablishing peace and order. Henry II (1002-24), a great-nephew of Otto I, was a pious, well-educated, and conscientious monarch. He depended very largely on the support of the great ecclesiastical lords, the bishops, whom he himself had chosen and invested with their offices. He gave them still more land and administrative authority, and with their aid gradually suppressed the rebellious lay nobles. On his death the crown passed to Conrad II (1024-39), Duke of Franconia, who founded a new dynasty. One event of Conrad's reign is of outstanding importance. In 1032, he fell heir to the kingdom of Burgundy, which thereafter was part of the Holy Roman Empire. It lay in the valley of the Rhone, including what is now part of eastern France and western Switzerland. It must not be confused with the duchy of Burgundy, which lay to the northwest of it and was a fief of France.

Most if not all readers have trouble comprehending the pronoun it in the second to last sentence of discourse (96). Now compare (96) with passage (97):
The next two emperors, wiser than the erratic Otto III, turned their attention to the slow and difficult task of rebuilding royal authority in Germany and reestablishing peace and order. Henry II, a great-nephew of Otto I, was a pious, well-educated, and conscientious monarch. He depended very largely on the support of the great ecclesiastical lords, the bishops, whom he himself had chosen and invested with their offices. He gave them still more land and administrative authority, and with their aid gradually suppressed the rebellious lay nobles. On his death the crown passed to Conrad II, Duke of Franconia, who founded a new dynasty. One event of Conrad's reign is of outstanding importance. In 1032, he fell heir to the kingdom of Burgundy, which thereafter was a part of the Holy Roman Empire. But it was also claimed by the Spanish King Alberto VO, and a new conflict soon arose.

In passage (97), the pronoun it referring to the kingdom of Burgundy in the last sentence is much more immediately comprehensible than the pronoun it of the second to last sentence in (96). What causes the difference in comprehension?

In the passages above, the sentence In 1032, he fell heir to the kingdom of Burgundy, which... is intended by the authors to be the event of importance in Conrad's reign. However, from the comments of informants, and from my own reaction, I believe that most readers process this sentence as a background statement that leads up to the important event. Now at this point in the interpretation of (96), the reader has an expectation that 'the kingdom of Burgundy' will be talked about further, but only with respect to the important event of Conrad's reign. The continuation in (96), It lay in the valley of the Rhone..., does not satisfy the reader's expectation. It is quite implausible.

In (97), on the other hand, the continuation satisfies the reader's expectations. While the last sentence of (97) does not
specifically mention an event, the clause it was also claimed by cer-
tainly foreshadows some kind of conflict, hence some kind of event.

There are other complications here, too. It is not always
possible to say that a hearer or reader has one and only one expect-
tation in mind. 'Conrad' is clearly the major discourse topic here,
while 'Burgundy' is introduced only with respect to Conrad and some
event. As a consequence, 'Burgundy' is not perceived as a topic in its
own right. This is precisely the situation that sets up restricted
expectations.

2.6.5.2 Plausible identification

At a level below restricted expectations, where the reader does
have some expectation of a proposition, the reader may be supposed to
be trying his best to make sense out of a passage, trying to compre-
hend the point of the passage. A pronoun reference may satisfy his
desire. Consider discourse (98):

(98) Some money was invested in public works or for the ex-
ploration of mines or forests. The greater part of
Roman capital was, however, still invested, as of old,
in land. The second Punic War had greatly accelerated
the growth of large estates. They were made up of lands
taken over by the government and elased to anyone who
could invest the necessary capital to restore the
war-ravaged land to good use.

In (98), it is not at all clear that the reader has any specific
expectations following his reading of the second to last sentence,

The second Punic War had greatly accelerated.... Perhaps he does
have the expectation that the paragraph as a whole will be about 'land',
but after the statement about 'the second Punic War', in the third
sentence, probably anything goes about anything having to do with
land. The reader finds the passage to be in a state of topical vacuum, rambling without any apparent aim, and he wants to determine what the specific point of the following material will be. He has no expectations, but the concept of estates is still fairly fresh in his mind. Consequently, he can understand the pronoun they of the final sentence of (98) because he is searching for a topic, and a pronoun reference is a good indication of what a topic might be.

This topical vacuum must, I claim, be filled very quickly in order for the pronoun to be comprehended. Consider (99):

(99) Some money was invested in public works or for the exploitation of mines or forests. The greater part of Roman capital was, however, still invested, as of old, in land. The second Punic War had greatly accelerated the growth of large estates. Research has shown that they were made up of lands taken over by the government and leased to anyone who could invest the necessary capital to restore the war-ravaged land to good use.

The pronoun in (99) is far less comprehensible than in (98) with just the minor alteration that moves the pronoun from initial position in the final sentence of (98), to subject position of an embedded clause in (99). This clause, however, is not very deeply embedded, nor does the main clause, Research has shown have very much content. The conclusion is that the topical vacuum, if it is to be filled by a pronoun, must be filled immediately, or else the vacuum will continue.

Perhaps an analogy would be helpful here. Consider a motorist who is driving on an interstate highway toward a large city he has never visited before. He knows that there will be numerous exits to the city and he is not sure which exit he is supposed to take. The
traffic is quite heavy and if he drives in the extreme right hand lane, he will have difficulty with the large number of cars on the entrance ramps trying to merge. He sees many exit signs that point into the city and is afraid that if he goes any further, he might drive right past the city.

Our driver was once told the street name on which he is supposed to exit, but he has long forgotten it. He thinks he'll know the exit if he sees it. Now if the driver sees a sign with a street name far enough in advance of the actual exit, and further if that sign jogs his memory, that is if he identifies that sign as the probable correct one, he may be able to move over to the right and get off the freeway. If the sign comes too late, he cannot get off and overshoots his exit. If, as in some cases, the exit sign comes only right before the exit itself, the driver may not even notice it, for he will be looking for advance signs of his exit.

This example of the driver is quite similar to the case I have made for plausible identifications of pronouns. The reader, like the driver, doesn't know exactly what his destination (topic) is. He makes his best guess with the information given, provided that the information attracts his attention quickly. The only difference between the reader and the driver is that the reader may stop and look back to figure out the referent of the pronoun. If the driver applies his brakes, a nasty accident could result.

It is important that I reiterate here that plausible identifications have to do with something that is neither expected nor unexpected. Non-expectation with respect to pronoun reference is not the
same as negative expectation. In passage (98), the reader has no expectation that anything in particular will be talked about next. This is different from the case given in section 2.6.4 example (88), where the reader has a negative expectation with respect to 'roads', and in fact expects the passage to continue to be about something other than roads. In the next section, I will show that when very specific factors are present, the comprehension of pronouns is possible even when the reader has a negative expectation.

2.6.5.3 Forced identification

It appears that a pronoun can be comprehended even in the face of negative expectation, but the speaker or writer can cause this to happen only by brute force. Consider discourse (100):

(100) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. The emperor had them built originally for the army, but they served the merchant class as well.

The pronoun them in the final sentence is comprehensible. Compare this with the pronoun They in example (88) from section 2.6.4.

(88) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. They were built originally for the army but served the merchant class as well.

In (88) the pronoun they is not as comprehensible as is them in (100). The difference here is that in (100), the repetition of emperor serves to connect the last two sentences. The syntactic parallelism, that is,
emperor...constructed...roads:: emperor...them...built provides more clues to jog the memory of the reader. Particularly, repetition of emperor helps to force the identification of them as 'roads'.

It is crucial that the lexical noun emperor be present. Had the last sentence of discourse (100) been as in (101):

(101) He had them built originally for the army...
then comprehension would again be impaired. The reason here is that there is a negative expectation with respect to emperor as well as with respect to roads. So, even if the reader can grasp the referent of he because of the subject position (see above section 2.6.4.2) of the lexical noun phrase the Roman emperor of the previous sentence, this processing overloads the reader so much that the pronoun them still cannot be immediately comprehended.

It should be pointed out that a writer who uses the syntactic parallelism to counteract negative expectation is not doing something bad. Nor is it necessarily poor organization on the writer's part to have written the text such that negative expectation arises. The writer here wishes to add some further information about the 'roads' that he considers interesting or relevant. The information in this particular discourse context is, however, unexpected, and so the writer must take steps to insure comprehensibility.
NOTES

1 There may be trouble comprehending I's and you's in a transcript of a conversational discourse, especially if speaker boundaries are not marked.

2 The distinction on the basis of animacy and gender is, of course, a general one. Baby is sometimes referred to with the pronoun it, and a ship may be a she. These non-normal uses of pronouns are discussed at length by traditional grammarians like Curme 1935:137-40 and Jespersen 1949:203-18.

3 There are exceptions to this general rule. Consider (a):
   (a) Herman picked his nose and ate it.
See Corum 1973 for more examples of these 'anaphoric peninsulas'.
3.0 Introduction

In this chapter I will review some of the recent linguistic literature on discourse phenomena and discourse analysis. I am particularly concerned with research that might bear on the comprehension (as opposed to production) side of discourse, and how this research compares with my findings about referential connection just discussed in Chapter 2. I will first present Halliday and Hasan's 1976 view of cohesion in discourse, which, they say (p.4) 'refers to relations of meaning that exist within a text'. After reviewing the various types of 'relations of meaning' adduced by Halliday and Hasan, I will argue that their cohesion analysis is much to 'surfacy', that relations of meaning between elements in a discourse should be analyzed whether or not they are physically realized in the text.

I will then take up the term 'topic', a term which has different meaning for different researchers. I will point out that this term is used three different ways: as syntactic topic (as discussed by Li and Thompson 1976) used to refer to certain languages that have a surface constituent that can properly be called a topic constituent; as semantic topic (as discussed by Kuno 1976) used to refer to semantic restrictions on intrasentential relations, like the
relationship of a relative clause to its head; as discourse topic (discussed by Keenan and Schieffelin 1976) used to refer to what the discourse as a whole (or as a subpart) is about. The discourse topic has to do with intersentential relations.

The next major section on information distribution has to do with the idea that certain parts of a sentence may be old or given, that is, information that the hearer or reader can be said to know already. Other parts of the sentence will be said to contain new information. This is reviewed by Chafe 1976. I will dispute the old-new dichotomy and propose that from the hearer's or reader's viewpoint, that is, in the hearer's or reader's consciousness, information distribution should be considered a continuous notion. That is, some concepts will be said to be more highly activated than others, more thought about by the reader or hearer than others. Support for this view will come from an interpretation of the pronoun comprehension data from Chapter 2.

Finally, I will argue that a full understanding of the whys and wherefores of activatedness and discourse topic can best be understood by looking at the discourse function of a sentence. In section 2.1, I very briefly broached the subject of discourse function or role of a sentence, and in this chapter and the next, I consider discourse function more from a theoretical linguistic viewpoint.
3.1 Cohesion and ties

I begin with a quote from Halliday and Hasan 1976:

The concept of cohesion is a semantic one; it refers to the relations of meaning that exist within the text, and that define it as a text. Cohesion occurs where the interpretation of some element in the discourse is dependent on that of another. The one presupposes the other, in the sense that it cannot be effectively decoded except by recourse to it. When this happens a relation of cohesion is set up, and the two elements, the presupposing and the presupposed, are thereby at least potentially integrated into a text.

Halliday and Hasan (p.3) use the term 'tie' to refer to a single instance of cohesion, a term for one occurrence of cohesively related items'. Clearly, what I have been discussing about pronoun comprehension in Chapter 2 has much to do with the concept of cohesion. In fact, Halliday and Hasan list reference as one type of cohesion:

Reference is the relationship between an element of the text and something else by reference to which it is interpreted in the given instance. Reference is a potentially cohesive relation because the thing that serves as the source of the interpretation may itself be an element of text. (pp.308-9)

Before discussing the whole concept of cohesion, I will briefly present Halliday and Hasan's other types of cohesion.

Substitution and ellipsis are according to Halliday and Hasan two different forms of another type of cohesive relationship:

The principle distinguishing reference from substitution is reasonably clear. Substitution is a relation between linguistic items, such as words or phrases; whereas reference is a relation between meanings. In terms of the linguistic system, reference is a relation on the semantic level whereas substitution is a relation on the lexicogrammatical level, the level of grammar and vocabulary, or linguistic 'form'. Ellipsis...is in this respect simply a kind of substitution; it can be defined as substitution by zero. (p.89)

And further:
Substitution...is a relation within the text. A substitute is a sort of counter which is used in place of the repetition of a particular item. For example in

a. My axe is too blunt. I must get a sharper one.

b. You think Joan already knows?—I think everybody does.

one and does are both substitutes: one substitutes for axe, and does for knows. And whereas in reference there is no implication that the presupposed item could itself have figured in the text, and in many instances we know it could not have done, this is implied in the case of substitution. Thus, in (a and b) it would be entirely possible to 'replace' one by axe and does by knows. (p. 89)

Now as to ellipsis:

When we talk of ellipsis, we are not referring to any and every instance in which there is some information that the speaker has to supply from his own evidence. That would apply to practically every sentence that is ever spoken or written, and would be of no help in explaining the nature of a text. We are referring specifically to sentences, clauses, etc whose structure is such as to presuppose some preceding item, which then serves as the source of the missing information. An elliptical item is one which, as it were, leaves specific structural slots to be filled from elsewhere. This is exactly the same as presupposition by substitution, except that in substitution an explicit 'counter' is used, e.g.: one or do, as a place-marker for what is presupposed, whereas in ellipsis nothing is inserted into the slot. That is why we say that ellipsis can be regarded as substitution by zero.

For example,

(a) John brought some carnations, and Catherine some sweet peas.

The structure of the second clause is Subject and Complement. This structure normally appears only in clauses in which at least one element, the Predicator, is presupposed to be supplied from the preceding clause. Note that there is no possible alternative interpretation here; the second clause can be interpreted only as Catherine brought some sweet peas. (p. 143)

Substitution and ellipsis are cohesive by virtue of grammatical structure. Halliday and Hasan also present cohesive relationships on the lexical level, reiteration and collocation:
Reiteration. This is the repetition of a lexical item, or the occurrence of a synonym of some kind, in the context of reference; that is, where the two occurrences have the same referent. Typically, therefore, a reiterated lexical item is accompanied by a reference item, usually the or a demonstrative. But since reiteration is itself cohesive in its own right, as shown by the fact that cohesion takes place even where there is no referential relation, such instances constitute a double tie...(pp.318-9)

The last sentence here is meant to account for what Halliday and Hasan find as a cohesive relationship between the sentences of (102):

(102) I have a car named Raphael. When one owns a car, he can get quite involved with it.

There is no referential relationship between car in the first sentence of (102) and the second occurrence of car, but, according to Halliday and Hasan (p.319), 'the repetitiveness itself constitutes a tie'.

Collocation is the other form of lexical cohesion:

There is always the possibility of cohesion between any pair of lexical items which are in some way associated with each other in the language. So we will find a very marked cohesive effect deriving from the occurrence in proximity with each other of pairs such as the following, whose meaning relation is not easy to classify in systematic semantic terms:

laugh...joke, blade...sharp, garden...dig, ill...doctor,
try...succeed, bee...honey, door...window, king...crown,
boat...row, sunshine...cloud. The cohesive effect of such pairs depends not so much on any systematic semantic relationship as on their tendency to share the same lexical environment, to occur in collocation with one another. In general, any two lexical items having similar patterns of collocation—that is, tending to appear in similar contexts—will generate a cohesive force if they occur in adjacent sentences.(pp285-6)

Conjunction is the final type of cohesive relationship discussed by Halliday and Hasan:

It is based on the assumption that there are in the linguistic system forms of systematic relationships between sentences. There are a number of possible ways in which the system allows for the parts of a text to be connected to one another in meaning.(p.320)
Various types of conjunction are expressed by three kinds of conjunctive adjuncts:

(1) adverbs, including:
   simple adverbs ('coordinating conjunctions'), eg: but, so, then, next
   compound adverbs in -ly, eg: accordingly, subsequently, actually
   compound adverbs in there- and where-, eg: therefore, thereupon, whereat
(2) other compound adverbs, eg: furthermore, nevertheless, anyway, instead, besides
   prepositional phrases, eg: on the contrary, as a result in addition
(3) prepositional expressions with that or other reference item, the latter being (i) optional, eg: as a result of that, instead of that, in addition to that, or (ii) obligatory, eg: in spite of that, because of that.

By developing a typology of cohesive relations, and subdividing each general category into more specific subcategories, and subdividing these into still more specific subcategories, Halliday and Hasan are able to perform an analysis of cohesion for any given text, detailing where ties occur and what kinds of ties there are in that text. There is clearly much merit in this kind of endeavor. One would suspect that the more ties there are in a text or discourse, the easier that discourse would be to comprehend. But Halliday and Hasan (p.324-7) admit that cohesion is not the only object of study in the analysis of discourse. They give the theme system (see below section 3.2) and the information system (see below section 3.3) of a text as other objects of study as well as the 'macrostructure' of the discourse which leads one to call a discourse a conversation, or narrative, or 'prayer, or soap-opera, etc.
3.1.1 Specific criticisms

We have yet to ask a very crucial question, namely, what exactly can the analysis of cohesion tell us about language production and comprehension? Again I quote from Halliday and Hasan 1976:327-8:

The linguistic analysis of a text is not an interpretation of that text; it is an explanation. This point emerges clearly, though it is often misunderstood, in the context of stylistics, the linguistic analysis of literary texts. The linguistic analysis of literature is not an interpretation of what the text means; it is an explanation of why and how it means what it does.

Similarly, to the extent that linguistic analysis is concerned with evaluation, a linguistic analysis of a text is not an evaluation of that text; it is an explanation of how and why it is valued as it is. A linguistic analysis of a literary text aims at explaining the interpretation and evaluation that are put upon that text. The role of linguistics is to say how and why the text means what it does to the reader or listener, and how and why he evaluates it in a certain way.

This point can be generalized to the study of texts as a whole. The analysis of cohesion, together with other aspects of texture, will not in general add anything new to the interpretation of a text. What it will do is to show why the text is interpreted in a certain way; including why it is ambiguous in interpretation wherever it is so. It will explain the nature of conversational inferences, the meanings that the hearer gets out of the text without the speaker having apparently put them in—presuppositions from the culture, from the shared experience of the participants, and from the situation and the surrounding text. It is the text-forming or 'textual' component of the semantic system that specifically provides the linguistic means through which such presuppositions are made. Similarly the analysis of cohesion will not tell you that this or that is a good text or a bad text or an effective or ineffective one in the context. But it will tell you something of why you think it is a good text or a bad text, or whatever you do think about it.

The material Halliday and Hasan present in *Cohesion in English* is an excellent compendium of discourse phenomena, greatly detailing what elements of a sentence have relationships to elements in another sentence, and how these elements do so. But this is different from saying that the analysis of cohesion 'will tell you something of why you think
[a text] is a good text or a bad text, or whatever you do think about it.'

It is clear that a discourse would probably be uninterpretable, unevaluable, and incomprehensible if it contained no cohesive ties. But what is bothersome about Halliday and Hasan's notion of cohesion is that it is completely anchored to the physical cohesive ties in the realization of the discourse. Especially with respect to Halliday and Hasan's cohesion by conjunction, we can see that cohesion is present whether or not a surface marker is present. So, while Halliday and Hasan consider rather in (103) as a cohesive conjunction of correction:

(103) I don't think she minds the cold. It's the damp she objects to, rather.

this sequence without the word rather as in (104) still involves the same cohesive tie:

(104) I don't think she minds the cold. It's the damp she objects to.

In most every case there is some kind of conjunctive tie between two sentences. Halliday and Hasan, however, maintain a surface analysis of cohesion. For example, they give the sequences in (105) as examples of cohesion by conjunction, but state (p.231) that in sequence (106), the second sentence is cohesive by virtue of reference, that is, the word his in the second sentence:

(105) The captain had steered a course close in to the shore.
   a. As a result, b. As a result of this, c. As a result of this move, d. As a result of his caution,
   } they avoided the worst of the storm.

(106) The captain had steered a course close in to the shore. The passengers were heartily thankful for his caution.
Now it is true that the second sentence in (106) is not cohesive by a missing conjunction as a result—note the badness of (107):

(107) The captain had steered a course close in to the shore. As a result the passengers were heartily thankful for his caution.

But note that there is clearly a conjunctive relationship between the two sentences of (106), paraphrasable as (108):

(108) The captain had steered a course close in to the shore. And since something bad might have happened otherwise, the passengers were heartily thankful for his caution.

where the conjunction (and the whole first clause) in the second sentence of (108) is missing from (106), but must certainly be interpreted or deduced by the reader in order to make any sense out of the relationship between the two sentences. Another bit of cohesion that must be involved is that the reader understand that the captain's having stayed close to shore constitutes caution on the captain's part. If the reader cannot understand this, the sequence again makes no sense.

When we find ties not physically present, and when we find cases where a noun like caution refers to what the previous sentence amounts to, then we must ask: what can actually be meant by cohesion? Without a doubt, the physical realizations of semantic ties in the text shown by Halliday and Hasan are an important part of the understanding of a text. But the fact that the ties exist is not what is important. What is important for reading comprehension, at least, is the degree of ease or difficulty with which these ties are perceived, and the factors affecting these perceptions. Now, as I have stated above, it may well be the case that the fewer surface ties there are, the harder it will be for the reader to comprehend a passage. But there are some other
possibilities that need to be investigated. I will discuss these now.

If the notion of cohesion is extended to include those ties that must be inferred by the reader, as I tried to show with example (108) above, then we might propose an experiment whereby all unexpressed cohesive ties are 'filled in' by the investigator. Then the reader could be tested for comprehension of the discourse. We could determine by varying the number of surface ties whether or not the simple concept of surface tie is the key to comprehension difficulties. Now the discussion in Chapter 2 suggests that it is probably not just the number of ties, but rather the quality of the ties that will in part determine comprehension. That is, in at least some cases, a coreferential pronoun will not be comprehended whereas a coreferential lexical noun phrase will. But it has also been shown in Chapter 2 that the type of tie needed is controlled by higher level discourse considerations, specifically by expectation, which may in turn be controlled by discourse function of a sentence. This has been shown for the comprehension of reference, but what of the other kinds of ties proposed by Halliday and Hasan?

On the lexical level, as was discussed above, are the ties of reiteration and collocation. Reiteration refers not just to an identical noun reference or mention as in (102) above, but also to 'general nouns' as idea in (109) from Halliday and Hasan 1976:275:

(109) Henry seems convinced there's money in dairy farming.
I don't know what gave him the idea.

Reiteration can also refer to repetition of verbs as well. Thus, drive in (110) would be an example of reiteration:
(110) John likes to drive his car. Marg likes to drive, too. The question that needs to be asked is why is drive cohesive in this sequence? The repetition of a lexical item or synonym or superordinate word, or the collocational relationship between two words, is not cohesive without a proper context. Consider (111):

(111) John likes to drive his car. Mary, who's a good friend of mine who drives a Porsche, likes to cook.

In Halliday and Hasan's analysis, drive would likely be counted as a cohesive tie between the two sentences of (111). Yet if (111) is part of a sequence in which I am talking about my acquaintances' likes and dislikes, the fact that Mary drives a Porsche may well have nothing to do with the organization of the discourse, and need not be interpreted in that way for the understanding of the discourse. The topic of the discourse is "my acquaintances' likes and dislikes", with each sentence being an example sentence of the topic. The clause about Mary driving a Porsche is merely a part of the description of one of my friends, and has little to do with the connection to the previous sentence.

I suggest that the notion of cohesiveness of lexical items must be founded on higher level discourse considerations, specifically those of topic and discourse function of a sentence. Note that with respect to the comprehension of general nouns, a reiterative lexical device, topic and discourse function are crucial. Consider (112):

(112) Matthew likes to sew. Mary, who's a good friend of mine who drives a Porsche, likes to cook. The thing is fire engine red.

The general noun the thing fails to be comprehended as a reference to
Mary's Porsche because the discourse up to that point is about my friends' household hobbies.

So, for both reiteration and collocation, topic and discourse function seem to be quite important. I believe Halliday and Hasan 1976:288 mean to refer to the importance of topic when they write:

> In lexical cohesion...it is not a case of there being particular lexical items which always have a cohesive function. Every lexical item may enter into a cohesive relation, but by itself it carries no indication whether it is functioning cohesively or not. That can be established only by reference to the text.

Halliday and Hasan do not provide any clear examples, however. Furthermore, they do not provide for a degree of cohesive force of an element, which might depend on how far from the topic that element is. So, in (112) above, the general noun thing would have to be marked as cohesive, for it is presupposed or established by the prior mention of Porsche. Yet its cohesive force (not to mention its comprehension) must be very low.

The efficacy of substitution and ellipsis, the grammatical cohesive ties, will, I suspect depend to a large degree on the same factors as the reference type ties. Consider this example of ellipsis, (113):

> (113) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. Many were used by the army to get to the marches quickly and safely.

There is trouble comprehending the elliptical Many in (113), just as there is difficulty comprehending the pronoun they in the sentence...
They were built originally for the army but served the merchant class as well of discourse (88), which differs from (113) only in the final sentence. This aspect of ellipsis requires a study similar to the one carried out in Chapter 2 on reference with pronouns. I believe that the similarity between conditions on ellipsis and conditions on the comprehension of pronouns and other kinds of reference can be seen with example (113). Another similar study could well be carried out for general nouns, as exemplified above by discourse (112).

Conjunction is the final type of cohesion. In most cases, conjunction can be seen as expressing the discourse function of a sentence. Expressions like for example, in other words, however, for this reason all give clues to the discourse function of the sentence; for example marks an example sentence, however marks a sentence of contrast, etc. As I said above, these conjunctive relationships are not always physically realized, but must often be interpreted by the reader as being present.

3.1.2 Summary

To summarize this section, I hope to have convinced the reader that the notion of cohesion derives from other discourse considerations, primarily, and is often (but not always) realized by the surface phenomena of the sort Halliday and Hasan discuss. The question is not: do two linguistic entities cohere? but rather: why and how do two linguistic entities cohere and what allows the perception of this cohesion? These latter questions appear to be answered by study the notion of topic, and the notion of discourse function of a sentence. This is what I will do in the following sections of this chapter.
3.2 Topic

Topic is a term much discussed in recent literature, especially in Li 1976. I would like here to review some of the discussions of the term 'topic' and also another term, 'theme', which often coincides with the notion of topic. I organize this section by distinguishing three kinds of topic proposed in recent literature, a surface syntactic topic phenomenon, a deeper semantic topic notion, called 'theme' by Kuno 1976, and the notion 'discourse topic' as discussed by Keenan and Schieffelin 1976.

3.2.1 Syntactic topic

Li and Thompson 1976 argue that the notion topic plays a syntactic role in the organization of sentences in some languages of the world. That is, Li and Thompson claim, that some languages, for example, Chinese, Lahu, and Lisu, are best described as having a basic syntactic sentence structure as in (114):

\[
(114) \quad \frac{NP_{1} \vert \vert NP_{2}}{\text{topic}} V
\]

where \( NP_{1} \), the **topic**, has a number of properties not possessed by **subjects**. Among these properties are:

1) Topics are always definite, while subjects need not be.

2) Topics do not necessarily have any selectional relation with a verb in a sentence, nor is there any necessary (or even usual) grammatical agreement between a topic and a verb.

3) Topics occur sentence initially and are not affected by any grammatical processes that take place within the sentence.
4) Topics 'appear to limit the applicability of the main predication to a certain restricted domain...The topic sets a spatial, temporal, or individual framework within which the main predication holds.' (Chafe 1976:50)

Li and Thompson 1976 present a number of example sentences of these properties. One striking proof of this topic-prominent sentence organization is a Lisu sentence, (115):

(115) làma nya ánâ kyù - a
tiger topic dog bite - declarative marker

which apparently is perfectly ambiguous between the readings 'tigers (topic), they bite dogs' and 'tigers(topic), dogs bite them'. Context will give the hearer clues as to what the intended meaning is. Li and Thompson admit (p.463) that discourse context may constrain the choice of topic, 'but within the constraints of discourse, the speaker still has considerable freedom in choosing a topic noun phrase regardless of what the verb is'.

While I do not have any personal acquaintance with any of Li and Thompson's topic-prominent languages, I find their arguments for a typology based on the syntactic role of subject versus that of topic to be strongly motivated. This does not mean that we cannot speak of topics when we discuss subject-prominent languages like English, for English does have some highly marked topic constructions (see below section 3.2.3 and above section 2.6.1).

One final point before leaving the topic of surface syntactic topics. Li and Thompson do mention that discourse context does play
a role in the selection of what can be a topic. We might also ask if the same factors that we saw in Chapter 2 affecting the perception of coreference for English would also hold for these topic-prominent languages. My suspicion is that they would, for the topic 'slot' in these languages is a full noun phrase, which presumably can be filled by whatever description is desired by the speaker.

3.2.2 Semantic topic

Kuno 1976 demonstrates that violations of Ross' 1967 Coordinate Structure Constraint (CSC) and Complex Noun Phrase Constraint (CNPC) within a relative clause are better or worse depending on whether the relative clause is more or less about its head noun. So, Kuno presents violations of the CSC, (116) and (117):

\[(116)^*\text{The lute which Henry plays and sings madrigals is warped.}\]

\[(117)^*\text{The nurse who polished my trombone and the plumber computed my tax was a blonde.}\]

(116) is bad because the second conjunct within the relative clause is not about the lute at all, but is rather a fact about Henry. Similarly the fact that the plumber in (117) computed my tax has nothing to do with the nurse.

Now compare (116) and (117) with (118):

\[(118)^?\text{The guitar that Mary bought and Jane paid for its carrying case was very expensive.}\]

Sentence (118) is much better than either (116) or (117). The reason, of course, is that the embedded clause (119):

\[(119) \text{Mary bought the guitar and Jane paid for its carrying case}\]

is completely about the guitar.
Kuno adduces similar examples for violations of the CNPC. Compare

(120) This is the child who there is nobody who is willing
to adopt.

(121) ?This is the child who I know a family which is willing
to adopt.

(122) *This is the child who John married a girl who dislikes,
where the relative clauses are progressively less about the head noun
child.

Kuno uses the term theme to refer to what a statement(clause) is
about. This can be thought of as topic as well if we go along with
Chafe that topic 'appears to limit the applicability of the main
predication to a restricted domain'. Kuno, however, does not commit
himself to a deep analysis whereby the 'theme' is an underlying con-
stituent in English (though he does propose this for Japanese). His
concern is that we do try to explain exceptions to rules and degree
of grammaticality judgments from a functional semantic point of view.

Note here that Kuno's explanations of degrees of grammaticality
with respect to violations of the CSC and CNPC have to do with
intrasentential relations. 'Theme', he has proposed as a semantic
notion. Now if we can 'star' a sentence out of context, then that
sentence must be, as I said in Chapter 1, anomalous, and not just
inconsiderate. The totally anomalous nature of (116), (117), and
(122) is not due to the simple fact that 'a relative clause must be
a statement about its head' as Kuno 1976:420 states in his Thematic
Constraint on Relative Clauses. We must go further and consider what
the function of a relative clause is.
It is generally well accepted that the function of a restrictive relative clause is to aid in identifying a noun or in picking out a noun from a number of other possible nouns identifiable by the same lexical item. Now the sentence (122):

(122) *This is the child who John married a girl who dislikes.

is not at all good because the relative clause is adding some new information, that is, the information that John married someone. This particular information is very far removed from fulfilling any kind of identificational function of the restrictive relative clause.

Note that (123) and (124) are somewhat strange even though no constraints are violated in these sentences:

(123) ?This is the child who a girl who John married dislikes.

(124) ?This is the child who is disliked by a girl who John married.

The problem here is that in both sentences there is an incredible overload of new information. That is, the child is being identified or distinguished from other children by information about a girl who in turn must be newly distinguished from other girls. Note that (125) with a definite the girl is better than (122):

(125) ?This is the child who John married the girl who dislikes.

where the phrase the girl who dislikes is considered as already known information (though we are of course still stuck with the new information that John married the girl). Compare the impeccable (126) with (123) above:

(126) This is the child who the girl who John married dislikes.

Again the girl being assumed as known is much more effective in picking
out the child. (For a discussion of given/known/old versus unknown/new information see section 3.3 below)

The semantic notion of theme then can be seen to be derivative from the actual pragmatic function of a syntactic structure, the restrictive relative clause. In this respect, then, we find Kuno's notion of a semantic theme for English is not as useful as it might seem because we can explain in pragmatic terms why a relative clause that violates the CNPC or CSC is relatively better or worse. It may well turn out that the facts of Japanese are such that a deep theme node might be appropriate, although the pragmatic explanations given for the English data would probably account for the Japanese data as well. However, since Japanese has a surface theme/topic marker, wa, there can still be arguments for an underlying theme/topic node in Japanese to account for relative clause restrictions. The crucial test of whether theme should be included as a deep category or not would be dependent on Japanese relative clauses functioning like sentences of the topic prominent languages given by Li and Thompson.

3.2.3 Discourse topic

In this section I will use as a point of departure Keenan and Schiefelin's 1976 article 'Topic as a discourse notion: a study of topics in the conversations of children and adults'. Discourse topic, according to Keenan and Schiefelin,

...is a proposition(or set of propositions) expressing a concern(or set of concerns) the speaker is addressing. It should be stressed that each declarative or interrogative utterance in a discourse has a specific discourse topic. It may be the case that the same discourse topic is sustained over a sequence of two or more utterances...On the other hand,
the discourse topic may change from utterance to utterance, sometimes drawing on the previous utterance...and sometimes not....(pp.342-3)

Note that while Keenan and Schieffelin are claiming that each utterance has a discourse topic, they are not necessarily claiming that the proposition which is the topic is physically realized in the utterance, like the syntactic topic of a topic prominent language, or the head noun of a relative clause. As will be seen shortly in Keenan and Schieffelin's examples, the topic is 'the concern that the speaker is addressing', which concern need not be characterizable by any specific sentence element.

I have been using 'topic' in the way Keenan and Schieffelin use it throughout this thesis. Recall that I said that in the sequence (117):

(117) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads.

the discourse topic throughout is 'ease and security of communications in the Roman empire'. This topic is the raison d'être of the second and third sentences in (127). Neither sentence shows this topic overtly, yet without the unity that the topic provides, we would not understand (127) as anything but a random sequence of facts.

Keenan and Schieffelin present a typology that divides up the kinds of contexts in which discourse topics emerge. Discourse topics can be connected in two related ways. First, two or more successive utterances may share the same discourse topic. So, Keenan and Schieffelin present a discourse in which a child looking at a toy calf
says, 'moo', and the child's mother responds, 'Moo, cow says moo.'

The discourse topic here, according to Keenan and Schieffelin is 'the cow makes some sound', and both utterances are claimed to provide new information with respect to the topic:

We refer to a topic that matches exactly that of the immediately preceding utterance as *collaborating discourse topic*. Sequences in which a discourse topic is sustained over two or more utterances are *topic collaborating sequences.* (p.341)

Related to collaborating topics are *incorporating discourse topics* which:

may take some presupposition of the immediately preceding discourse topic and/or the new information provided relevant to the discourse topic preceding (all part of the presupposition pool) and use it in a new discourse topic. (p.341)

So, if we take a discourse like (128):

(128) a. Mother: What do we need for the diaper?
    b. Child: Pin.
    c. Mother: Pin. Where are the pins?
    d. Child: home.

according to Keenan and Schieffelin the discourse topic 'we need something for the diaper' is established at (128a) and collaborated on in (128b). The mother in (128c) then establishes a new discourse topic 'the pins are somewhere' by topic incorporation, that is by the presupposition that 'pins exist', one can then ask 'where they exist'. Thus do Keenan and Schieffelin define topic incorporating sequences in which 'a discourse topic integrates a claim and/or a presupposition of an immediately prior utterance' (p.341). These topic incorporating sequences seem to be the kinds of sequences that I discussed in connection with the comprehension of pronouns in Chapter 2. I will speak at length about this presently.
Keenan and Schieffelin place topic-collaborating and topic-incorporating sequences under the super-category **continuous discourse**. Under **discontinuous discourse** are found two other types of discourse topic. **Reintroducing discourse topics** reintroduce 'a claim and/or discourse topic (or part thereof) that has appeared in the discourse history at some point prior to the immediately preceding utterance' (p.342). Specific English constructions like **getting back to... like you said before...** may mark such reintroducing topics. The final type, **introducing topic**, 'is in no way related to the preceding utterance, and does not draw on utterances produced elsewhere in the discourse' (p342).

The most interesting part of the Keenan–Schieffelin typology for my purposes here is the topic-incorporating type sequence. In examples like (129) from Chapter 2:

(129) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. They were built originally for the army but served the merchant class as well. The writer in the final sentence is 'integrating a claim of an immediately prior utterance'. He is making use of some new information from the preceding sentence, that is, **roads**. Most of the data of Chapter 2 can be classified as belonging to the incorporating type discourse. Clearly something more needs to be said about topic incorporation in terms of comprehension of the new topic, since as we can see in (129), a pronoun is sometimes not comprehended in this context. I will return to datum (129) and criticize the view of the strict
typology of discourse topic emergence after first introducing Keenan and Schieffelin's view of topic establishment.

Keenan and Schieffelin 1976:350-3 propose a dynamic model for topic establishment with four steps:

1) The speaker must secure the attention of the listener

2) The speaker must articulate his utterance clearly

3) The speaker must provide sufficient information for the listener to identify objects, etc., included in the discourse topic

4) The speaker must provide sufficient information for the listener to reconstruct the semantic relations obtaining between referents in the discourse topic

If at any of these steps the speaker receives negative feedback from the hearer, he must either drop the discourse topic or he must repair or correct the source of the misunderstanding or mishearing.

We need not concern ourselves with steps (1) and (2) for the present discussion. Keenan and Schieffelin's examples are all taken from informal, conversational discourse, and as a consequence they discuss at length repair procedures for when a discourse topic fails to be perceived. But since we are dealing in this study with the comprehension of written discourse, we may assume that the writer has his reader's attention and of course can not repair what is on the printed page.

Now let us consider steps (3) and (4) in Keenan and Schieffelin's dynamic model for establishing a discourse topic. As for step (3), with respect to discourse (129) above, we must ask: what does it mean for the listener (or reader) to have sufficient information to identify an object? A good deal has been written about what is needed to
identify a first mention object, that is an object mentioned in the
discourse for the first time. I will briefly review some of this
literature in section 4.1.2 when I discuss speaker/writer respons-
sibilities. But (129) does not involve first mention reference, but
rather second mention reference. Keenan and Schieffelin by step (3)
seem to have in mind the problems associated with first mention
reference, that is problems connected with the initial identification
of a referent. Perhaps they also have in mind the problem associated
with the expectation of identification as discussed in section 2.6.3,
and typified by the oddness of (84):

(84) While the Tartar power was fading in Russia, eastern
Europe was being menaced from the south by the advance
of another group of people of Asiatic origin. They were
originally nomads who, like the Seljuk Turks of an
earlier time, had drifted westward from central Asia and
had adopted Islam.

So, it seems that the problem connected with the comprehension of the
pronoun they in (129) has nothing specific to do with the reader being
able to identify the object, for the object roads is in the
immediately preceding sentence and is fully identified there.

As for step (4) of the model of topic establishment, 'the speaker
must provide sufficient information for the listener to reconstruct the
semantic relations obtaining between the referents in the discourse
topic', unfortunately, Keenan and Schieffelin do no more than give the
definition with no examples. So, this step is difficult to evaluate.
In the next two paragraphs I will argue for a rephrasing of step (4),
which I hope will make matters more clear.
The problem posed by (129) is one that in a sense confounds the Keenan-Schieffelin typology of discourse topic emergence. The last two sentences in (129) are clearly of the incorporating topic type according to definition. Yet when I discussed (129) in Chapter 2, I claimed that the reader was breaking topic from 'ease and security of communications' to 'roads designed by the emperor'. Now if (129) is read aloud, the last sentence will be uttered with a parenthetic intonation, indicating a break from topic. But changing topic is characteristic of discontinuous discourse, whereas incorporating topics appear in continuous discourse.

What is needed to account for these seemingly contradictory facts is a somewhat more fluid view of topic. By this I mean that we may view the so-called new information in any given sentence as potentially contributing to the introduction of an incorporating topic à la Keenan and Schieffelin. It is necessary that this new information be considered in light of the preceding context, that is, the effect the preceding context has on hearer or reader expectation. Step (4) of the dynamic model of topic establishment should read something like:

(4) The speaker must provide sufficient information for the listener to reconstruct the discourse appropriateness or relatedness of the discourse topic being established to the preceding discourse.

In the case of discourse (129), the writer must use the demonstrative determiner or demonstrative pronoun in order for the reader to be able to comprehend in the first place the relatedness of the final sentence to the previous one.
3.3 Information distribution: a review and a revision

Two terms that occur with great frequency in the discussion of topic, and in discourse studies in general, as evidenced by the previous sections are **new/unknown information** and **old/given/presupposed information**. I will use a quote from Chafe 1976:30 as a point of departure for this discussion:

> Given (or old) information is that knowledge which the speaker assumes to be in the consciousness of the addressee at the time of the utterance. So-called new information is what the speaker assumes he is introducing into the addressee's consciousness by what he says. The terminology has been and continues to be misleading to linguists and psychologists who use it. Calling something 'old information' suggests it is 'what the listener is expected to know already' and 'new information' is 'what the listener is not expected to know already,' something that is being introduced into the addressee's knowledge for the first time (the quotes are from Haviland and Clark 1974). But a speaker who says I saw your father yesterday is unlikely to assume that the addressee had no previous knowledge of his father, even though by the usual criteria your father would be considered new information. The point is that the speaker has assumed that the addressee was not thinking about his father at the moment. Terms like 'already activated' and 'newly activated' would convey this distinction more accurately, but are awkward; we will probably have to live with the terms 'given' or 'old' and 'new'.

Chafe states (p.31) that the given-new distinction 'is based almost entirely on introspective evidence' and that given information is typically 'pronounced with lower pitch and weaker stress than new, and it is subject to pronominalization'. Chafe worries a great deal about how to determine how long givenness will last, that is, what the conditions might be under which some item previously treated as given (unstressed or pronominalized) comes to be treated as new. He suggests that we look at 'the number of intervening sentences in which the item was not mentioned... [and] the effect of such discourse boundaries as
change of scene, where a whole new set of items can be assumed to enter the consciousness of the addressee, presumably pushing out old ones' (p. 33).

The quarrel I have with Chafe's view of the given-new distinction is that he believes it to be dichotomous, that is, that a linguistic element in discourse has either the status new or the status given. But again, let us consider discourse (129):

(129) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. They/These roads were built originally for the army but served the merchant class as well.

The pronoun they of the last sentence is not immediately comprehended. If we want to stick to the dichotomy given-new, then we must say that the phrase these roads in the last sentence of (129) is new information. But presumably roads is activated by the previous sentence, which should make roads 'given' in the final sentence.

To solve this dilemma we must take one of two approaches. First, we might say that the given-new distinction is not dichotomous, but is a continuous notion. The Prague School linguists under the recent leadership of Firbas have indeed proposed a scheme of degree of information, defining a notion of communicative dynamism (CD). Firbas 1966:270 states:

By the degree of CD carried by a sentence element we understand the extent to which the sentence element contributes to the development of the communication, to which it 'pushes the communication forward,' as it were.

But this would not solve the problem of the data in (129), for in the
Praguean scheme of things, as I understand it, *roads* in the second to last sentence in (129) would contain the highest degree of CD, that is, it would be the newest (rhematic) information. But in the final sentence, *roads* would carry the lowest degree of CD, containing the oldest (thematic) information. That is, if we assign 1's to the elements that we say are thematic, and succeeding higher numbers to elements that carry newer information, we would get an assignment of CD something like as in (130):

(130) In each province

\[ \text{the emperor}^{2} \text{ repaired or constructed}^{3} \]

\[ \text{a number of skillfully designed roads}^{4}. \text{ They} \]

\[ \text{were built}^{1} \text{ originally for the army}^{2}... \]

As I understand the assignment of CD, every sentence must have thematic information, even discourse initial sentences. The writings on CD do not show any specific way to determine what numbers to assign to what elements. The job is presumably easier in Czech, which has freer word order, so that the elements of a sentence tend to be ordered in ascending degrees of communicative dynamism. The problem for English is that word order is more fixed. The general problem with applying the CD model to comprehension is that there is no way to express the fact that *roads* in the second to last sentence is backgrounded by the preceding context. Sequence (130) is the assignment of CD, whether the previous context is present or not. However, without the preceding context that sets up the negative expectation, the pronoun *they* is easily comprehensible. There is no way to account for this in the Praguean model.
A second approach to solving the given-new dilemma posed by (129) would be to make Chafe's notion of **activatedness** a non-discrete notion. Chafe wishes to identify 'old' with 'already activated', and defines this as 'knowledge which the speaker assumes to be in the consciousness of the addressee at the time of the utterance'. I see no justification, however, for assuming that a person is either thinking about or not thinking about something at a particular moment. We would expect that a hearer or reader is thinking about, or has in mind, a number of things at a particular moment. Further, we would expect some things to be more important than others. Because of all this, I believe that we must assume that the entire content of a sentence, as it is perceived, is activated (thought about) to some degree. However, some elements or propositions may be activated to higher or lower degrees depending upon context, expectations, etc. Surely, for example, we would expect an incidental aside clause to be little thought about, as in the first relative clause in (131):

(131) Gwen, who, by the way, drives a green XKE, is a seductive so and so who can steal your heart away.

Compare that with a sentence, the sole function of which is to get the hearer to think about some concept, for example, (132):

(132) Now Gwen's green XKE, there's a neat car.

We must admit degrees of activation. We might, however, be able to make a case for the existence of only two levels of communication in the speaker's belief about the hearer's consciousness. That is, if the speaker believes that an element is activated beyond a certain threshold, he might assign that element the status 'given' and pronominalize
it or pronounce it with weak stress and low pitch. It would seem, however, that since not just pronominalization, but the kind of lexical description that a referent must receive in order to be understood, is dependent on activatedness, the distinction given-new is not a very helpful one in accounting for comprehension of reference in general. That is to say, that if we have found differences in comprehension with reference by pronoun, by definite article, and by demonstrative article and pronoun, and further differences depending on whether a relative clause is attached to the lexical reference, as examples throughout Chapter 2 have shown, then we must admit of a number of degrees of activation which even the speaker or writer must know about in order to make the proper lexical connection. It is of crucial importance to remember that the data on which this claim is based involve reference between adjacent sentences. We are not speaking here of how long it takes for a hearer or writer to forget a referent, but rather the process a reader or hearer goes through in initially storing a referent.

Taking this view of degrees of activatedness, we can say that roads in the second to last sentence of (129) is activated in consciousness, but to a low degree, for the idea that the emperor built roads is but an example of the main topic 'ease and security of communications'. Thus, when roads in the final sentence is treated as 'new', that is not pronominalized or pronounced with weak stress, we are not surprised, for we know that roads was not highly activated. Indeed we found in Chapter 2 that roads could be treated as 'old' only in a context that would allow the reader to dredge up the low-activated information,
that is, by syntactic parallelism, as in (133):

(133) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. The emperor had them built originally for the army, but they served the merchant class as well.

3.3.1 Activatedness and definiteness

There has been a good deal of discussion lately about the notion of definiteness, particularly by Chafe 1976 and Hawkins 1977a,b. What I want to discuss in this section is the comprehension of definiteness with respect to its interaction with activatedness. Other discussion of definiteness, particularly with respect to Hawkins' conception of a speaker's act of reference, will be postponed until Chapter 4.

Again a quote, from Chafe 1976:39, will best serve to introduce the subject:

Having a particular creature in mind,...I am perhaps most likely to categorize it in a way that leads me to call it a dog or the dog. But there is presumably an unlimited set of objects I might categorize in the same way. It is therefore of some interest in the communicative situation whether I think you already know and can identify the particular referent I have in mind. If I think you can, I will give this item the status of definite. The assumption in this case is not just 'I assume you already know this referent,' but also 'I assume you can pick out, from all the referents that might be categorized in this way, the one I have in mind.' Thus identifiable would be a better term than definite, but again we are stuck with the traditional label.

What I want to claim here is that identifiability of a noun may in some cases be dependent on the activatedness of some other noun.

Chafe notes (p.40) that identifiability may be easily accomplished in 'cases where one particular entails another, so that having said We
looked at a new house yesterday I can go on to say The kitchen was extra large, since a particular house can be expected to contain a particular kitchen'. What is missing from Chafe's discussion is that the phrase the kitchen alone would not be sufficient to identify the object in question had not house been quite highly activated. Consider (134) and (135):

(134) A good share of the amazing revival of commerce must be credited to the ease and security of communications within the empire. The Imperial fleet kept the Mediterranean Sea cleared of pirates. In each province the Roman emperor repaired or constructed a number of skillfully designed roads. The curbs were paved with marble from the Imperial quarries of Antennea.

(135) In each province the Roman emperor repaired or constructed a number of skillfully designed roads. The curbs were paved with marble from the Imperial quarries of Antennea.

In (134), since roads is not highly activated in the second to last sentence, the phrase the curbs fails to be comprehended, even though 'roads' generally entails 'curbs'. In (135), on the other hand, because the preceding context is lacking, roads is much more highly activated in the first sentence, and so the phrase the curbs is easily comprehended.

Another example, (136):

(136) June has a bunch of boyfriends who are really into possessions. Her friend John owns a Jaguar. Steve, who was to be the best man at June's wedding that got called off, has his very own Piper Cub. The automatic pilot cost him 20 thou to install.

Automatic pilot in (136) is difficult to comprehend. Note however, that Piper Cub itself is activated highly enough in this context so that a pronoun reference, it, is comprehensible, as in (137):
June has a bunch of boyfriends who are really into possessions. Her friend John owns a Jaguar. Steve, who was to be the best man at June's wedding that got called off, has his very own Piper Cub. It cost him 80 thou.

Removing some more context, Piper Cub can become so highly activated that automatic pilot is immediately understood, as in (138):

June has a bunch of boyfriends who are really into possessions. Steve, who was to be the best man at June's wedding that got called off, has his very own Piper Cub. The automatic pilot cost him 20 thou to install.

These last three passages illustrate very well the idea of degree of activation, and they also point up how hard it is to get a handle on exactly what does or does not make an element activated. Discourse (137) in particular has almost exactly the same discourse structure as the roads example, and yet the pronoun referring to Piper Cub can be comprehended, while the pronoun referring to roads cannot. Perhaps the difference in activation has to do with our cultural knowledge that Jaguars and Piper Cubs cost a lot of money, and hence, the last sentence of (137) was understood because of a fortuitous plausible identification. I have not, to be sure, investigated every factor involved in determining degree of activation, and much work clearly remains to be done. One factor, however, that clearly contributes to degree of activation is that of discourse function of a sentence, to which topic I now turn.

3.4 Discourse function

So far in this chapter I have discussed the notions of topic and activatedness. I have made the point that these terms are useful only when we can speak of a larger discourse context. Now the discourse
context of a sentence can be best described by making reference to the  
discourse functions  of those sentences that comprise the context and to 
the function of the particular sentence in question. I will claim in 
this section that the function of the sentence, for example, as a topic 
sentence, or as a comment sentence on a particular topic, will in great 
part determine whether or not a particular element will be highly 
activated. We have, in fact, already seen cases where the function of 
a clause determines how highly activated an element will be. For 
example, an appositive relative clause that gives incidental inform-
ation, will utterly fail to highly activate the information contained 
in it, as in (139):

(139) My neighbor Norman, who drives a Datsun 280Z, is rich 
beyond belief. It cost him 15,000 with all the 
options.

The pronoun it in the second sentence fails to be comprehended, for 
the hearer does not have the 'Datsun' very high in consciousness.

In this section, then, I want to go beyond the clause level to 
the level of discourse function of the sentence.

3.4.1 Topic sentences, comment sentences, and activation

I have already said quite a bit about topic sentences, these being 
sentences whose primary function is to set or introduce a topic. In 
section 2.6.1 I presented idiomatic sentences like (74) and (75):

(74) Remember Mona?

(75) Now as to Pine Valley.

which, I claimed, demanded continuations of the persons, things, places, 
etc., they introduced. In Kantor 1976:176,179, I demonstrated that 
discourse-initial or paragraph-initial backward pronominalized
sentences as in discourse (140):

(140) A week before he goes to Rome at the head of the United States delegation to the World Food Congress, Secretary of Agriculture Earl Butz continues to defend a position at odds with the needs of poor people and with the interests of our own country.

and discourse-initial sentences containing pronouns, as in (141):

(141) None of them knew the color of the sky. Their eyes glanced level, and were fastened upon the waves that swept toward them.

all demanded that the following material be about the pronominalized or backward pronominalized noun phrase.

Other, more normal, sentences may of course be topic sentences. We also found in section 2.1 that topic sentences may be embedded or restricted. Following topic sentences in expository prose come sentences that might properly be called example or comment sentences. The interesting property of comment sentences is that they may themselves potentially introduce new topics. The sentence following the comment sentence may have as topic some of the new information contained in the comment sentence. This is the topic-collaborating sequence of Keenan and Schieffelin. The question then becomes: what about a particular comment sentence allows it to serve a double function? That is, what about a comment sentence causes it to highly activate its new information so that that information will be easily comprehended in a succeeding sentence? We have seen one case, our oft-used roads example, where a comment sentence fails to highly activate its new information. We saw that this failure stemmed from the fact that the sentence In each province the Roman emperor... was only one of a series of example sentences.
Now let us consider another sequence, part of the passage we saw in section 2.1, given here as (142):

(142) 2) The Phoenicians, as the Greeks called them, were a Semitic people, mostly of Canaanite origin, settled along what is today the Lebanese coast. 3) Taking advantage of the economic void created by the destruction of the Mycenaean maritime trade, they took to the sea and founded a commercial empire based on Tyre, Sidon and other coastal towns. 4) Although they had highly skilled industries, the Phoenicians were primarily merchants. 5) They sailed to every part of the Mediterranean world and by 800 B.C. had established trading colonies, some of which grew to be powerful cities, as far west as Carthage and Cadiz. 6) Their culture was borrowed largely from the Egyptians and Mesopotamians, but their contribution as disseminators of civilization throughout the Mediterranean was extremely important. 7) It was through them that the alphabet was introduced into Europe and spread throughout the Middle East, replacing the cumbersome cuneiform and hieroglyphic scripts. 8) They did not themselves invent the idea.

Notice that the phrase the idea in sentence (8) is read with weak stress, indicating that it is old information. Now I said in section 2.1 that sentence (6) was a new subtopic sentence and that (7) was an example sentence. Clearly, however, while (7) is indeed an example or comment on (6), it also serves to introduce alphabet as a topic, as witnessed by the weak stress on idea in (8).

Now notice the structure of sentence (7). It is an assertive cleft of the type I discussed in section 1.4.3. Not only does alphabet occur in subject position in (7), but it appears in a greatly highlighted assertive cleft. It is therefore not surprising that alphabet should be highly activated, and so idea can be treated as bld. It is important to understand that it is only alphabet that is highly activated in (7). Notice that in sequence (143):
Their culture was borrowed largely from the Egyptians and Mesopotamians, but their contribution as disseminators of civilization throughout the Mediterranean was extremely important. It was through them that the alphabet was introduced into Europe and spread throughout the Middle East, replacing the cumbersome cuneiform and hieroglyphic scripts. They had tried for years to use the cuneiform and hieroglyphic scripts, but with no success.

What does all this mean? I believe that these examples and this discussion points up the need to create a typology of discourse function of a sentence, and further (perhaps even more importantly) points up the need to determine what exactly is the communicative role of various syntactic structures and syntactic positions. Notice that if we change the syntactic structure of sentence (7) of the above examples, as in:

(144) 6) Their culture was borrowed largely from the Egyptians and Mesopotamians, but their contribution as disseminators of civilization throughout the Mediterranean was extremely important. 7) Their introduction of the alphabet into Europe and the Middle East caused the replacement of the cumbersome cuneiform and hieroglyphic scripts. 8) They did not themselves invent the idea.

we find sentence (8) to be somewhat odd. Alphabet is not as highly activated here as it is in (142), as evidenced by the failure to easily comprehend idea in sentence (8). Now I don't claim that (7) in (142) and (7) in (144) are exactly the same sentence, that is that the
two sentences are transformationally related. The two sentences do have approximately the same meaning though, and each serves perfectly well as a comment on sentence (6). However, sentence (7) of (144) does not introduce alphabet as a topic as well as sentence (7) in (142) does. So, as I have said, we must take a closer look at the internal structure of what might be called comment sentences to find out what really contributes to activatedness.

3.4.2 Implications

The cases above of discourse function, syntactic structure and activation are the only ones I want to treat in any detail. I do want to say a bit here about other discourse functions, and other discourse structure.

Though I have probably given the impression that discourse is always structured as sequences of topic or comment sentences, this is, of course, not the case. I discussed in section 2.1 collateral sentences. I spoke in section 2.6.5.1 of setting sentences. These sentences are often interspersed with topic sentences and comment sentences. The reader or hearer must be able to recognize the function of any of these and relate them to the discourse as a whole. The discourse may involve temporal events, causal events, etc., and again, the hearer or reader must sort these out and determine when, for example, the speaker or writer is breaking a temporal chain of events with some other kind of information.

All of these facts about the kinds of processing a reader or hearer must do, and about the functions of syntactic structures discussed above, present a convincing case for doing a full-blown
discourse analysis in order to arrive at what aids or hinders comprehension. By a full-blown analysis I mean a detailed study of discourse function of sentences and syntactic structures, along with detailed analyses of what semantic or pragmatic connections not physically realized in the text must be inferred by the reader or hearer. Of course a concomitant study of the writer or speaker concerns must be done as well, in order to see what information he is particularly concerned about communicating and what material he feels is easily understood. In the next chapter, I begin to address what kind of theoretical model might be used in performing such a discourse analysis.
CHAPTER IV
THE MANAGEMENT OF DISCOURSE CONNECTION

4.0 Introduction

In this chapter I want to discuss the speaker's or writer's role in creating a comprehensible discourse. In particular I will talk about the speaker's or writer's secondary competence to produce considerate discourses, and how the rules of this secondary competence might best be described in a theoretical framework. This discussion has actually already begun in the previous chapter. I have discussed, for example, Keenan and Schieffelin's 1976 dynamic model of discourse topic establishment, and I have mentioned the work of Hawkins 1977a,b. These articles discuss notions that are primarily speaker-based. What I have done for the most part in previous chapters is to evaluate some of these notions from a comprehension viewpoint. What I now want to do is to take these studies on their own merits as speaker or writer oriented studies and evaluate them critically with specific respect to 'a grammar for the speaker'.

4.1 The act approach and discourse topic

A common characteristic of the studies named above is that they all involve a speech-act oriented analysis of the communicative situation. Keenan and Schieffelin 1976:350 state that steps (3) and (4) of their dynamic model of discourse topic establishment:
3) The speaker must provide sufficient information for the listener to identify objects, etc., included in the discourse topic.

4) The speaker must provide sufficient information for the listener to reconstruct the semantic relations obtaining between referents in the discourse topic.

'might be restated as Felicity Conditions on the successful establishment of a discourse topic'.

Compare Keenan and Schieffelin's steps (3) and (4) to Searle's 1969:66 conditions on successfully performing a sincere act of requesting:

1) The speaker believes the hearer is able to perform the action (that is, the action to be requested)

2) It is not obvious to both the speaker and hearer that the hearer will perform the action to be requested of him in the normal course of events of his own accord.

3) The speaker wants the hearer to perform the action requested.

Now Keenan and Schieffelin's steps (3) and (4) do not look anything like Searle's conditions (1)-(3), conditions which, I might add, are similar to conditions on other speech acts, like commanding, informing, thanking, etc. Searle's conditions (1)-(3) are preconditions on the speaker's act of requesting. Note the phrases, in (1), the speaker believes, in (2), it is not obvious to...the speaker, in (3), the speaker wants. These phrases describe what goes on in the speaker's mind before he utters his request. If any of these preconditions does not obtain, the speaker, in theory, will not make his request. If he does, he will be behaving uncooperatively and may suffer a sanction.

Keenan and Schieffelin's steps (3) and (4) cannot be regarded as preconditions on the act of topic establishment. In both conditions, the key phrase is the speaker must provide sufficient information for
the listener. This phrase describes what the speaker must do in the process of establishing a topic. It does not describe the mental state of the speaker when he plans to perform an act of topic establishment. Further, it is not even clear that Keenan and Schieffelin's steps (3) and (4) have really to do with discourse topic establishment. To see why this is so, let us take a closer look and these two steps.

Step (3), that the speaker must provide sufficient information for the listener to identify objects, etc., is meant to account for cases like (145):

(145) Speaker A: He's crazy, he's mad! I love him!

Speaker B: Who's crazy? Who's mad?

where speaker B has no inkling of who he is. Speaker A has not identified the object(person) in question. But step (3) turns out not to be a step in discourse topic establishment specifically. It is rather a step in a general theory of felicitous reference. Consider (146):

(146) Speaker A: My brother is crazy. First he hits my Aunt Jane. Next he clobbers Mrs. Flibber. Finally, he slugs me.

Speaker B: Who's Mrs. Flibber?

Mrs. Flibber is not 'included in the discourse topic', but is simply new information which is not identified sufficiently for the listener. So, step (3) is seen not to have anything specific to do with discourse topic, but rather with any kind of identificatory information which will allow the listener to understand the objects, etc., mentioned in the discourse.

What about step (4), that the speaker must provide information for the listener to reconstruct the semantic relations between referents in
the discourse topic? As I mentioned in the last chapter, Keenan and Schieffelin do not give any specific examples of step (4) failing to be satisfied. Perhaps they mean by step (4) to account for data like (147):

(147) Speaker A: It's six o'clock. Oh, I'll never get married.

Speaker B: What on earth do you mean?

Speaker A: Oh, Bruce was supposed to call from Europe by 5:30 and I was sure that now that he's had a fling with a Swedish girl and has his head clear, he'd ask me to marry him. But now?

In (147), Speaker A seems to have left out the connection (a quite complicated one at that) between her first sentence and her second, and naturally, Speaker B cannot understand what is going on. Again, though, we would question whether step (4) has anything do to specifically with discourse topic establishment as opposed to simple rules of cooperative conversation, not leaving too much to the hearer's imagination.

If we want to speak, then, of a speech act of topic establishment, we cannot use Keenan and Schieffelin's steps as felicity conditions. Let us instead take Searle's felicity conditions on the act of requesting and see what the felicity conditions on an act of topic establishment might look like:

1) The speaker believes the hearer is able to perform the action (that is, the action to be requested)

1') The speaker believes that the listener is able or willing to understand the discourse topic
2) It is not obvious to both the speaker and hearer that the hearer will perform the action to be requested of him in the normal course of events.

2') It is not obvious to both the speaker and listener that the listener will understand the discourse topic in the normal course of events of his own accord.

3) The speaker wants the hearer to perform the action requested.

3') The speaker wants the listener to understand the discourse topic.

Condition (2') is the crucial felicity condition for putting together a theory of **act of topic establishment**, as I will now show.

I have already noted cases in which there are special syntactic forms for establishing a topic. Locutions like (148)-(150):

(148) Now with respect to Seneca and Edmund...

(149) I'm going to talk now about Matt and Maggie.

(150) Now as to Brook.

are as clearly performative sentences of topic introduction as (151) is a performative sentence of request and (152) is a performative sentence of promising:

(151) I request that you please open the window.

(152) I promise that I will show up for bowling on Friday.

We can say that patterns like (148) - (150) are used as **direct or explicit acts of topic introduction** in which the speaker directly informs his hearer that a new topic is being introduced. Similarly, (151) has been described as a direct act of request and (152) as a direct act of promising.

In **speech act theory** we also have what are called **indirect speech acts** in which a sentence of the form of one act carries the force of
another kind of act. So, for example, sentence (153) superficially has the form of an information question, but carries the illocutionary of a request to pass the salt:

(153) Can you pass me the salt?

Similarly, we have for acts of topic establishment (154) and (155):

(154) Remember Trish?

(155) Recall the incident in Pine Valley yesterday.

which superficially have the form of a question and a command respectively, but again carry the force of topic establishment.

These highly 'marked' constructions in (148)-(150), (154) and (155) are not, however, the norm in expository discourse. What can be said about an act of topic establishment when most sentences in expository discourses are simple declarative sentences of assertion?

What we can do, I believe, is to consider topic introduction or establishment as one of a number of possible acts that can be performed with a declarative sentence. Other acts that a speaker or writer can perform are acts of exemplification, in which the speaker gives an example of something he has just claimed, and closely related, acts of support wherein a speaker can give a reason or supporting statement for a previous claim. There are also acts of elaboration or comment, in which the speaker adds new information about a particular person, object, or fact, for the purpose of informing, rather than justifying.

Just like the act of topic establishment, some of these acts may be direct performative acts, though they rarely occur:
(156a) EXEMPLIFICATION: The government of the United States shows poor judgment in dealing with foreign countries. I exemplify this claim in stating that the U.S. government has made a fool out of itself in negotiations with Panama over the Canal Treaty.

(157a) SUPPORT: John is crazy. I support this claim in telling you that his psychiatrist has certified him so. (*I exemplify this claim...)

(158a) COMMENT: John is crazy. With respect to craziness, I tell you that lots of people are crazy. (*I comment)

Now we typically do not find such performative utterances in discourse. Rather, we find the performative deleted, leaving perhaps a 'speech act connective or adverbial' sometimes:

(156b) The government of the United States shows poor judgment in dealing with foreign countries. For example, the U.S. government has made a fool out of itself in negotiations with Panama over the Canal Treaty.

(157b) John is crazy. His psychiatrist has declared him so.

(158b) John is crazy. But with respect to craziness, lots of people are crazy.

This kind of analysis, that is, trying to determine the speech act type of an utterance in discourse, has been carried out by Sinclair and Coulthard 1975 for classroom discourse. They discuss acts like clues elicitations, prompts, etc., to account for the interactions between teachers and pupils. This approach should also be possible for expository monologue discourse, though the task of delimiting the possible expository acts is a difficult one, for often there are few surface cues like adverbials, connectives, or special syntactic structures.

I return now to the notion act of topic introduction or establishment. There will be many cases in a discourse where condition (2') will not be satisfied, that is, the speaker or writer will in fact believe it to be obvious to the hearer or reader what the discourse
topic is. In such cases, it would be infelicitous for the speaker/writer to perform an act of topic introduction or establishment. Yet we have noted that topics are constantly being changed, and we must therefore ask how a new topic may become established without an act of establishment. I believe that the way in which a topic becomes established in the normal course of events is that a speaker or writer intends, as a perlocutionary effect of his act of exemplification or comment or support, for his hearer or reader to understand the discourse topic as established without actually performing such an act.

I illustrate just how this perlocutionary effect works with discourse (159):

(159) 1) The disruption caused by the invasions, and the resulting power vacuum in the Middle East, presented opportunities which were exploited by two small but very important nations: the Phoenicians and the Hebrews. 2) The Phoenicians, as the Greeks called them, were a Semitic people, mostly of Canaanite origin, settled along what is today the Lebanese coast. 3) Taking advantage of the economic void created by the destruction of the Mycenean maritime trade, they took to the sea and founded a commercial empire based on Tyre, Sidon, and other coastal towns. 4) Although they had highly skilled industries, the Phoenicians were primarily merchants. 5) They sailed to every part of the Mediterranean world and by 800 B.C. had established trading colonies, some of which grew to be powerful cities, as far west as Carthage and Cadiz.

Sentence (1) can properly be called an indirect act of topic introduction. It has the form of an assertion, but it can be 'worked out' to be an introductory act for two good reasons. First, it is paragraph-initial, which is every bit as much a marker of topic introduction function as a question mark or rising intonation is of a question. Secondly, the semantics of the sentence reveals that the sentence is
'presentative'. A classic presentative frame is There was once a king who..., and it can easily be seen that sentence (1) of (159) is also about the emergence on the scene of the Hebrews and Phoenicians. The second sentence can be regarded as an indirect subtopic sentence, for it makes reference to only a subset of the topic established by the first sentence, and also because it is stative, providing only a description of the Phoenicians. The discourse topic is now 'the Phoenicians'.

Sentence (3) can only be characterized as an act of comment, one that informs the reader of something about the Phoenicians. Sentence (4) then is a comment upon sentence (3); it adds something more about the Phoenicians' commercial empire. Sentence (4) does not justify a claim, but rather elaborates on sentence (3), just as sentence (3) elaborates on sentence (2). Note that it is 'the commercial empire of the Phoenicians' that is the discourse topic that connects up sentence (4) to sentence (3). There does not appear to have been any speech act, any illocutionary act that specifically connects the two sentences by establishing 'commercial empire' as topic. It is rather the case that the writer expects that the sequence (3) and (4) will be understood by the reader, and further expects that the reader, by understanding the connection, that is, that sentence (4) is a comment on sentence (3), will understand the discourse topic that makes this connection. This is why I say that the establishment of a discourse topic can be understood as a perlocutionary effect.

Sentence (5) is an example of an act of support, for (5) contains a statement that supports the claim or assertion that the Phoenicians were primarily merchants.
I do not wish to pursue this illustrative analysis further, for the categories of acts, and the methodology of determining how and why a particular sentence should be assigned to a particular act still needs to be worked out. The approach taken here, however, is important. It is in essence the approach taken by Grice 1975 that a speaker will speak cooperatively, employing a number of conversational maxims, among which is the maxim 'Be relevant'. Both the speaker or writer and the hearer or reader are unconsciously aware of this maxim and others. The speaker would violate a maxim of manner, 'Be brief', and a maxim of quantity, 'Do not make your contribution more informative than is required', by stopping to introduce or establish each topic specifically. Explicit establishment of 'commercial empire', for example, might have been done in the following form, (160):

(160) The Phoenicians, as the Greeks called them, were a Semitic people....Taking advantage of the economic void...they took to the sea and founded a commercial empire....With regard to this commercial empire, although they had highly skilled industries, they were primarily merchants.

The phrase with regard to this commercial empire clearly establishes the topic. However, such unnecessary verbiage is an insult to the reader's intelligence. A sentence like the last one in (160) should be regarded as a complex sentence consisting of two illocutionary acts, the act of topic establishment, realized by the phrase with regard to this commercial empire, and the act of comment, the rest of the sentence. But such explicit establishment of topic is not in general needed or useful, except in those cases where the speaker or writer believes that his hearer or reader will not understand the discourse
topic, or in those cases where the speaker or writer feels the need to
strongly reiterate or reintroduce the discourse topic for some effect.

In a topic prominent language, a sentence like With regard to this
commercial empire, although... would be the norm. A sequence of sen-
tences all of which share the same element as topic, as in (161):

(161) Huby is a good friend of mine. He's weird at times.
But often people find him fun to be with. He often
makes me and others laugh.

would presumably have structure (162) in a topic prominent language:

(162) Huby topic marker a good friend of mine is. He top mkr
at times weird. He top mkr people often fun to be with
find. He top mkr me and others often makes laugh.

In such topic prominent language, the illocutionary force of explicit
topic establishment would, I suspect, be mitigated by the fact that
the topic-comment structure of these sentences is the unmarked basic
sentence pattern. The first mention of Huby in (162) would establish
the topic. The rest of the he-topic marker constituents serve no
illocutionary purpose. In a subject prominent language like English,
however, a preposed topic phrase like with regard to or as for or a
left dislocated construction like (163):

(163) Huby, now there's a weird character.

will serve better to establish a topic because these phrases and con-
structions are not part of the basic syntactic patterns of the language.

4.1.1 The relationship between activatedness and topic establishment

It is clear that a writer, especially, will think ahead as to what
will be communicated. As a consequence, he will often arrange for a
perlocutionary effect to be very easy to grasp. We have already seen
sequence (143):
Their culture was borrowed largely from the Egyptians and Mesopotamians, but their contribution as disseminators of civilization throughout the Mediterranean was extremely important.

It was through them that the alphabet was introduced into Europe and spread throughout the Middle East, replacing the cumbersome cuneiform and hieroglyphic scripts.

They did not themselves invent the idea.

and noted that **alphabet** in sentence (7) is highly activated. Because sentence (7) is clearly an act of exemplification of sentence (6), that is, the Phoenicians' introduction of the alphabet is an example of their contribution as disseminators of civilization, we don't want to say that sentence (7) is an act of topic establishment. Sentence (7) is rather an exemplification sentence in which the authors have used a syntactic pattern that introduces a potential topic ('alphabet') with a very high degree of activatedness, such that its establishment in sentence (8) is almost predictable. A topic is considered **established** when it is used as topic in a sentence. Thus, alphabet is established in (8). I predict that a reader would take longer to process and understand a sentence following sentence (7) which was about 'cuneiform scripts' than he would take to understand a sentence like (8), which is about 'alphabet'. Experiments should be done to bear out this claim.

The relationship between degree of activation and discourse topic establishment, then, should be seen as an intention on the part of the speaker or writer to introduce as clearly as possible a possible discourse topic, so that that topic can be easily understood. The establishment of the topic, however, is often a by-product of the various acts of commenting, supporting, etc., rather than the result of an illocutionary act of establishment.
4.1.2 Acts and reference with the definite article

Hawkins 1977a,b presents a long and quite comprehensive argument for what acts a speaker performs when he uses the definite article. He also presents what he considers the appropriateness or felicity conditions on those acts. Unlike Keenan and Schieffelin's conditions on topic establishment (see above section 4.1), Hawkins' appropriateness conditions do have to do with what the speaker needs to believe about his hearer in order to make a successful reference with a definite article. As will be seen presently, Hawkins' conditions refer to cases in which the hearer has trouble identifying exactly what the referent of the referring phrase is because of his lack of shared knowledge with the speaker. Nothing Hawkins says conflicts with what I have discussed previously about activatedness of an element in consciousness. Hence, I don't want to go into any great detail on Hawkins' work other than to present his summary of acts and conditions, and to give examples of how the conditions account for failures of reference with the definite article. I will then have some very brief comments on the value of studies like his.

The summary of Hawkins' 1977b location theory of definite reference is:

According to the location theory the speaker performs the following acts when using a definite article. He

a) introduces a referent to the hearer; and

b) instructs the hearer to locate the referent in some shared set of objects...; and

c) refers to the totality of the objects or mass within this set which satisfy the referring expression.
These acts will only be successful if the following appropriateness conditions are fulfilled:

1) **Set existence condition**: the speaker and hearer must indeed share the set of objects that the referent is to be located in.

2) **Set identifiability condition**: the hearer must be able to infer either from previous discourse or from the situation of utterance which shared set is actually intended by the speaker.

3) **Set membership condition**: the referent must in fact exist in the shared set which has been inferred.

4) **Set composition conditions**:  
   i) there must not be any other objects in the shared set satisfying the descriptive predicate in addition to those referred to by the definite description, i.e. there must not be fewer linguistic referents referred to by the definite description than there are objects in the shared set; and
   
   ii) the number of linguistic referents referred to by the definite description must not exceed the number of objects of the appropriate kind in the shared set; and
   
   iii) the hearer must either know or be able to infer that the intended object has the property that is used to refer to it in the descriptive predicate.

Condition (1), the set existence condition, fails in cases where the hearer does not share general knowledge of association with the speaker, for example, the oddness of (164) when the hearer has no knowledge of linguistics:

(164) I'm going to do a phonological analysis of Grbnyx. The phonemes of the language are easily identified.

Condition (2) refers to not being able to identify which of a number of referents the definite phrase refers to because of a choice of different sets, for example in (165):

(165) I've just spoken to the professor. What? The one over there? No, the one I was just talking to you about.
Condition (3) refers to the failure of (166) if the hearer does not have any previous knowledge of the professor from associations, the situation, or previous discourse:

(166) I've just seen the professor again. The professor? Oh, didn't I tell you.

Condition (4i) refers to a failure as in (167):

(167) A: The 85 senators all voted against the bill.  
     B: There are 100 senators.  
     A: But there were only 85 senators on the floor at the time.

Condition (4ii) accounts for a failure as in (168):

(168) There was a wedding in Dayton yesterday. The brides looked stunning.--The brides?--Oh, two twins marrying two twins. I wonder if they'll ever swap partners?

Condition (4iii) accounts for (169):

(169) Get me the framisstat.--The what?--The thing you take a reading on the framis with--Oh, that's a framisstat.

Hawkins study highlights what the speaker's responsibilities to his hearer(s) are. The various conditions described by Hawkins should be viewed as rules of considerateness, violations of which will lead to inconsiderate discourses.

Reference itself is a precondition on performing any of the illocutionary act I have discussed. One must of course successfully refer to something before he can make an assertion about that thing. The acts that Hawkins describes in (a), (b), and (c) above are themselves preconditions on other acts. Similar acts and conditions might be set up for reference with a personal pronoun, with one crucial difference.
Pronouns, as we have noted, have far less semantic content than fully lexical phrases. So, if we look at the conditions given by Hawkins for reference with the definite article, we find them much less applicable to reference with personal pronouns. For example, the set existence condition is almost useless, since pronouns typically have a textual referent. So, corresponding to (164) above, we might compare (170):

(170) I'm going to do a phonological analysis of Grbnyx. They are easily identifiable.

which is totally anomalous. The only kind of data I can imagine a set existence condition having any usefulness in accounting for is anaphoric peninsulas, like in (171):

(171) John threw up and then cleaned it all up.

The set identifiability condition might take care of pronoun ambiguity, as in (172), and the set membership condition will account for an inconsideration caused by using a pronoun as a first mention, as in (173):

(172) I've just spoken to him.—Who? John or Bill?
(173) He's gorgeous. —Who's he?

The set composition conditions are not very useful, since pronouns are only singular or plural, and since they must have a textual referent. Perhaps (174) is a violation of condition (4iii):

(174) Send for Meredith. He's a good plumber.—He?

In summary, Hawkins has presented what I believe is a correct set of conditions on reference with the definite article, conditions that can be extended somewhat to include pronoun reference as well.
These conditions give reasons why a discourse might be judged inconsiderate. The acts that the speaker performs in referring should themselves be viewed as preconditions on other acts, even as preconditions on communication as a whole.

I have included this section for completeness, for I wanted to show that failure of reference by pronouns for reasons other than misjudged activatedness can be accounted for nicely. In the next section, I will discuss the conditions on speaker or writer use of pronouns, etc., that have to do with the speaker's assessment of the activatedness of a referent.

4.2 The speaker's or writer's assessment of activatedness

In trying to develop a grammar that would be a model of a speaker's or writer's secondary competence, we may use the Gricean maxims and the speech act analysis of sentence types outlined in section 4.1 above as a superstructure. We also need a general theory of felicitous reference, a part of which Hawkins has provided, as was just discussed in section 4.1.2.

Another part of this theory of felicitous reference is the incorporation of a mechanism to describe how the writer or speaker views the activation of a linguistic element in the consciousness of his reader or hearer. This mechanism can not look like Hawkins' conditions on successful definite reference, for activatedness of an element is not describable along a number of parameters as definiteness is. The only condition about activatedness that can be stated in the manner in which Hawkins' conditions are stated is something like (175):
(175) The speaker believes that element x is activated to a high enough degree in his hearer's consciousness such that the hearer will understand the particular reference used.

Now (175) states nothing but the obvious, and certainly makes no predictions. We will see shortly that it is a real condition, though. We should note that Hawkins' conditions had to do specifically with the use of the definite article. His are conditions under which reference with the definite article is successful. That is, given that a definite article is to be used in reference, that reference will be successful if the various conditions are satisfied. The concept of activatedness, on the other hand, will require us to find a set of conditions that determine which particular lexical description or descriptions in what syntactic structure can be used to guarantee successful, immediately comprehensible reference. That is, given that a reference is to be made, that reference will be successful only if an (the) appropriate referring phrase (in an appropriate environment) is used.

The 'under which' conditions and the 'that determine' conditions can be found at all levels of linguistic structure. For example, in the phonology of English, we may study the contexts in which individual phonemes can occur. We can say, for instance, that /h/ will occur only syllable-initially in non-zero-stressed syllables. Here we have stated the conditions (contexts) under which /h/ is properly used in English. In this aspect of phonology, there is no dynamic purposeful thought or action on the part of the speaker. Now we can also study the conditions that determine whether or not a particular
phoneme or phonemes will be phonetically realized. So, we can show that when the word *prohibition* is derived from *prohibit*, the /h/ is dynamically elided because the second syllable of *prohibition* becomes unstressed.

On the syntactic/semantic level, we might try to determine the contexts in which a passive sentence might be used. These would be the 'under which' conditions. We can also take a given context and a given proposition and try to determine the contextual conditions 'that determine' what syntactic structure will most appropriately realize the proposition. So, we might find that the passive construction can only be used when conditions $x$, $y$, and $z$ obtain. We might also find that conditions $a$, $b$, and $c$ require the use of the passive to the exclusion of any other syntactic structure that will realize the same proposition. Now clearly whenever conditions $a$, $b$, and $c$ obtain, conditions $x$, $y$, and $z$ are satisfied. That is, if the passive must be used, then the conditions under which a passive sentence can be used must be satisfied. However, these conditions $x$, $y$, and $z$ may be present and yet the passive does not have to be used. In our phonological example, if /h/ winds up in an unstressed syllable, it must be deleted. However, a segment that is stressed-syllable-initial need not be /h/.

In the same way we can look at the speaker's or writer's assessment of the activatedness of an element in the consciousness of his hearer or reader. On the one hand, the speaker's assessment of the activatedness of a referent can be said to condition his use of characteristic structures. If the speaker believes the element in
question has very low activatedness, he may use one of three morpho-
syntactic structures. He may 1) use a demonstrative determiner to
give his hearer a better clue to the referent, 2) use a relative
clause or other modificalional device to give the hearer more infor-
mation about the referent (or a combination of 1 and 2 if activated-
ness is quite low) or 3) use a syntactically and semantically parallel
structure so that his hearer will understand a pronoun referent. For
example in discourse (176), the writer may use three different types
of reference, all of which are comprehensible:

(176) A good share of the amazing revival of commerce must
be credited to the ease and security of communications
within the empire. The Imperial fleet kept the
Mediterranean Sea cleared of pirates. In each province
the Roman emperor repaired or constructed a number of
skillfully designed roads.
1) These roads were built originally for the army...
2) The roads that the emperor constructed were built
originally for the army...
3) The emperor had them built originally for the army...

For elements that possess higher degrees of activatedness, the
speaker or writer, of course, is freer to use a pronoun or noun phrase
with a definite article (both with 'given' low pitch and weak stress).
He may use these in unconstrained structures as well, that is, he need
not use any parallelism. The reason that the speaker is able to have
this freedom is that he has a knowledge of what kinds of structures
can originally introduce a referent with a high degree of activated-
ness. We have seen these, structures like assertive clefts, fixed
phrases like Remember Delia?, and syntactically prominent slots like
subject position. A speaker or writer who plans his discourse can
make use of these structures, fixed phrases, and syntactic positions
to gain immediate activatedness of an element.

And having gained immediate activatedness of the element, the speaker or writer does not appeal to conditions that determine what kind of structure or reference he must use. All he needs to do is to confirm that the kind of reference he uses satisfies the conditions under which that kind of reference may be used, for example, Hawkins' conditions on the use of the definite article, and condition (175):

(175) The speaker believes that element $x$ is activated to a high enough degree in his hearer's consciousness that the hearer will understand the particular reference used.

Where do the conditions that determine the use of characteristic syntactic structures and lexical referring phrases come from? Their immediate source must be the speaker's or writer's understanding of the perceptual factors about discourse that I first introduced in section 2.6 and discussed throughout Chapters 2 and 3. A speaker or writer comes to know that a hearer or reader will not have certain elements highly activated in the cases of negative expectation, restricted expectation, and topical vacuum, as illustrated in Chapter 2. From this knowledge, the speaker or writer may form the conditions on the use of his morphosyntactic structures for felicitous reference.

These conditions are only applicable in the extreme cases where an element has very low activatedness. We would similarly expect there to be only extreme cases in which a passive sentence was required to the exclusion of any other structure. In the unmarked case, the speaker or writer, having a knowledge of how the syntax and discourse structure can contribute to raising the activatedness of an element,
can avoid the need for calling on these conditions of last resort. This has been illustrated by the Phoenician alphabet example in section 3.4.1 and by the topic establishing structures like topic sentences and fixed introductory phrases.

The claim has been presented that a speaker or writer needs to call upon the conditions that determine specially referential phrase (or special syntactic constructions) only when the speaker or writer believes that activatedness is very low. For all other cases, the speaker or writer checks to see that his referring element is consonant with his belief in the activatedness of the element in the addressee's consciousness. Now this particular aspect of language processing does not go on in isolation, of course.

The speaker or writer must also have knowledge in the first place of what lexical, syntactic, semantic, and discourse structures will cause an element to be highly activated. I have discussed some of these considerations extensively, although, as I have pointed out, we need to do a full-blown discourse analysis to arrive at any final conclusions. This is a task that will not be accomplished overnight, or even by a generation of scholars. Indeed, there has already been at least a generation of scholarship in linguistic discourse analysis. Prague School linguists like Firbas 1966, Textlinguistik researchers like Dressler 1972, tagmemicists like Longacre 1968 and Grimes 1975, have only begun to open up the field of discourse analysis.

And if the problems associated with discourse structure and activatedness are not difficult enough to get a handle on, we must also worry about the interaction of activatedness considerations with what
I have called semantic or pragmatic considerations. The discussion to this point has probably given the impression that if an element is very highly activated, then almost any referring phrase will be comprehensible, barring ambiguities. We find, however, that speakers of a language tend to create from differences in form, differences in meaning. So, in some dialects of American English, alternative pronunciations of the word *greasy*, [grizi] and [grisi] may have different meanings for the same speaker. I know some speakers of English who use [grisi] for those items that are intrinsically greasy, like oil and fried chicken, but use [grizi] as a pejorative term for unexpected occurrences of goo, as when they are forced to eat a [grizi] hamburger in a [grizi] spoon.

The same kind of differentiation may take place with lexical reference in discourse. We can see examples in which the demonstrative that can be seen in some cases as an indication of camaraderie whereas a reference with a definite article would not. So, a garage mechanic might utter (177) when volunteering information, whereas (178) would be uttered only if the mechanic had been asked to look over the car.

(177) That left front tire is pretty worn.

(178) The left front tire is pretty worn.

The point I am trying to make here is that activatedness considerations will allow a number of possible referential descriptions, but other aspects of the language, ambiguity considerations or possible semantic pragmatic effects of any other sort may limit the actual use of the referential description. Here is a good example of what I mean.
I have noticed that a highly activated noun phrase cannot be pronominalized, or even referred to with a definite article, in a performative utterance of definition or naming, as in (179):

(179) This experiment is conducted using this glass beaker. I call \{'it \*the beaker \}
\{this beaker\} Instrument A from now on.

Compare (179) with (180), which does not involve any act of naming:

(180) This experiment is conducted using this glass beaker. It/The beaker/This beaker is filled with a highly intoxicating trioxene compound, and then is shaken violently.

The restriction here seems to have to do with the particular act of naming, and this restriction has precedence over activatedness considerations. The utterance must be a performative one. Note that in (181):

(181) What's this beaker here? Oh, I call it Instrument A. the speaker uses call in a habitual non-performative sense and normal activatedness considerations allow the comprehension of the pronoun it.

Sequences (179)–(181) show another subtle semantic/pragmatic effect on surface lexical selection. If what I have claimed about these data is true, a speaker should never utter (179) using a pronoun except as a performance error. That is, because the use of the demonstrative here is required by the particular speech act, a sentence like the second of (179) containing a pronoun would be termed anomalous, not inconsiderate. We can expect to find many others of these 'quirks' of the language as we move toward a highly detailed and careful description of English, and we must be prepared to recognize them and sort them out from one another.
NOTES

1 There are other acts like acts of comment that cannot take or do not easily take overt performative verbs. For example, it is impossible to threaten someone using the verb to threaten, (a) *(a) I threaten you that if you don't vacuum the rug today, I'll rip your lips off.

2 I quote from Zwicky and Kantor (to appear):
   Pure variety is unstable: differences in form tend to be seen as corresponding to differences in meaning, or at least...to be understood as conveying differences in stylistic level or regional or social dialect. Because of this tendency towards differentiation, some linguists (for instance Chafe 1970:86-90 and Bolinger 1975) have maintained that identity of meaning is much rarer than scholars have generally supposed.

3 This example is an offshoot of Lakoff 1974. Lakoff notes that the demonstrative that can be used as an indicator of solidarity, but she might not agree with my analysis of the definite article here.
5.1 Secondary competence: how to study it and applications of its study

In the last chapter I sketched out the linguistic guts of a theory of activatedness of elements in a discourse. I claimed that there was a general condition by which a speaker or writer had to insure that his lexical description matched his belief in the ability of his hearer or reader to comprehend the reference, a condition that refers to activatedness, the degree to which an element is thought about in the mind of the hearer or reader. I claimed that the speaker or writer formulated conditions that determine what particular structures and lexical descriptions will guarantee successful reference. I further discussed the proposal that the speaker or writer has a knowledge of how syntax and discourse structure can contribute to the raising of activatedness of an element. All of this knowledge possessed by the speaker or writer, I have claimed, is a part of his secondary competence. I want to conclude here with a further discussion of this secondary competence of the speaker/writer, of how we may go about studying it, and what the applications of this study can be to the teaching of reading and the teaching of writing.

That inconsiderateness as I have defined it occurs is an obvious fact. It is further obvious that inconsiderateness does not in
general result from performance errors. If that were the case, there would be no college composition teachers, for inconsiderateness could be easily caught by the writer in reading over what he had written, just as a speaker can say that something he has uttered was a slip or an error, upon being shown something he has misspoken.

So, we must assume that inconsiderateness is the result either of rules of the secondary competence or lack of particular rules. For example, a speaker or writer might not have a condition by which he will adopt a specific device (structure) to make an easily comprehensible connection in a situation of negative expectation. In fact, I have had composition teachers tell me that the pronoun they in the 'roads' example was perfectly comprehensible. Their reasoning was that as long as the pronoun referred unambiguously to roads, then it was understandable.

It is highly likely that these composition teachers would never write the pronoun if they were creating the passage, but they tolerate such usage by their students because the pronoun in such a situation does not violate one of their prescriptive standards: Don't use a pronoun if it will result in ambiguous reference. Now clearly such a prescriptive standard may also be a condition that is part of secondary competence. But even if a pronoun reference is not inconsiderate for one reason, the reference may still be inconsiderate for another. In the case of the student who uses the pronoun in the 'roads' example, it may be that he lacks the negative expectation condition. Or, it may be that the student has apparatus to deal with
negative expectation, but he has other competing conditions, positive ones, such as 'pronouns may be felicitously used when they immediately follow their referents', a condition that fails in certain cases of negative expectation. Indeed, it would seem that the composition teachers who judged the 'roads' example as acceptable did so because they simply looked at the word roads, saw the pronoun They immediately following, and assumed the appropriateness condition for pronouns was satisfied. I hazard a guess that whereas a reader who simply reads for content would be upset by the pronoun They, the composition teacher, on the lookout for errors in spelling, logic, and ambiguity, might well overlook some of the writing problems caused by lack of rules or incorrect or inefficient rules that have to do with secondary competence.

There should be more concern with these rules, for the secondary competence of a speaker is the knowledge he has about structuring his discourse for the hearer's benefit. This competence in writing is quite hard to come by. Shaughnessy 1977:288 gives this example (182) from a freshman placement essay:

(182) It makes a lot of sense for a young person getting out of high school today to go to college for a degree if to him this is what he wants.

If a person feels that by getting a college degree would make him a better person although the jobs to fit his education might not be in demand of course it makes sense.

On the other hand it does not make sense to spend all that money to go through college to become a stenographer. If after high school you find a job, which you feel that you can spend the rest of your life doing and enjoying. I see no sense in going to college then.
Shaughnessy points out that the writer here does make two points: 'that if a person seeks personal enrichment college might make sense but if he seeks a good job that requires no degree, college makes no sense.' Now the organization of (182) is not what is expected of the college writer, and the essay is practically devoid of elaboration on the topics. Essay (182) illustrates that many freshmen do not have a good conception of considerate writing. A good deal of research has been done on the teaching of composition—Shaughnessy's book is an excellent example—and the result of such research is methodologies and materials for causing a student to learn about discourse organization. As the student learns about discourse organization, he of course adds knowledge to his secondary competence. He is able because of this knowledge to produce more considerate discourses (or at least essays that will earn him a better grade).

Now what is taught in composition courses comes from a long tradition of what expository prose is supposed to look like. From a linguistic standpoint, we want to know what rules and conditions are present in a speaker's secondary competence at any given stage in his language acquisition. By studying raw data of the sort given by Shaughnessy, we may begin to formulate a model of the speaker's or writer's secondary competence. A great deal may be learned about how a speaker or writer views the activatedness of a concept, for example, by studying his actual utterances or essays. We can then discover what rules and conditions the speaker or writer is operating with, and this discovery will have two nice results.
First, we will learn something about the organization of language. We will discover how a discourse is organized by speaker X or writer Y. We will also discover to what extent this speaker or writer is aware of the needs of his audience. If we show the writer a copy of his essay and he finds no corrections he wishes to make, we must assume that the writer was playing by the rules of his grammar.

Secondly, we may use our linguistic analytic tools to characterize the rules by which the writer is playing. We will then be in a position to formulate lessons designed to teach the writer to change the rules he has, or to add new rules, so that he may more efficiently communicate his message to his hearer or reader.

In order to get a further grasp of what secondary competence is like, we may study hearer or reader comprehension of both actual and made up data. While I have referred throughout this dissertation to 'considerations of the hearer or reader', I did not mean to refer to anything like an ideal comprehender of a language. Just as different hearers may use different strategies in parsing a sentence, so too must different hearers use different strategies in comprehending discourses. When we discover these strategies, we will learn even more about the organization of discourse and learn further what kinds of considerations the writer or speaker must have for his reader or hearer. And just as we can devise methods and materials for teaching writing, we should, from the knowledge about comprehension strategies, be able to devise new methods for the teaching of reading, and for the preparation of graded materials for reading.
5.2 Summary

I began this dissertation by arguing for a distinction between a primary linguistic competence, the knowledge a speaker has about his language by which he communicates his message in a semantically and syntactically non-anomalous fashion, and a secondary linguistic competence, the knowledge that a speaker has about how to communicate his message so that it will be most efficiently understood. To discover what kinds of rules or conditions exist in secondary competence, it was first necessary to examine what causes a hearer to have comprehension difficulties.

I examined in Chapter 2 in detail one specific example of comprehension, namely the comprehension of adjacent pronoun reference in discourse. I looked at the contexts in which a pronoun was or was not immediately comprehended. I was able to characterize a continuum of contexts in which pronouns were less well comprehended. They were comprehended best after special introductory phrases like Remember Harold? and after what can be called 'topic sentences'. At the lowest end of comprehensibility were pronoun references in what I called 'negative expectation' environments, where the reader or hearer expected a reference to something other than the referent of the pronoun.

I proposed in Chapter 3 that the comprehension of reference is dependent on the activation of an element in the consciousness of the hearer, the degree to which the hearer is thinking about an element. Degree of activatedness was found to be dependent on the communicative properties of syntactic structures, and on higher level
discourse structure. For example, negative expectation was caused by a parallelism of discourse functions of succeeding sentences in the 'roads' example.

In Chapter 4, I proposed a linguistic model for how the speaker or writer communicates new topics. He does this by both performative or indirect acts of topic introduction and establishment, or by getting the hearer or reader to understand the topic as a perlocutionary effect of being able to work out the connection between two sentences. I also proposed that a speaker or writer in acquiring language comes to know about activatedness considerations and forms conditions in his grammar, conditions of his secondary competence, by which, he structures his utterances to aid the hearer or reader in comprehending the discourse in general, and coreference in particular. Further, the speaker or writer comes to know what kinds of structures, for example assertive clefts, and what syntactic positions, for example, subject position, will be highly favorable as referent 'slots'.

Finally, in this chapter, I suggested that we study raw data in order to find out more about the secondary competence of the speaker or writer. When we find out what rules and conditions the speaker or writer is using, we will be better prepared to design materials for the teaching of composition. Similarly, studies of reading comprehension should lead to a better idea of what kinds of considerations a writer must take into account, and this will lead to more materials for the teaching of writing as well as graded materials for the teaching of reading.
LIST OF REFERENCES


