A PRAGMATIC STRUCTURAL ANALYSIS
OF CONVERSATIONS FOR
MAKING APPOINTMENTS

by

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THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
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A Pragmatic Structural Analysis of Conversations for Making Appointments

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ABSTRACT

Six studies examine conversational structure by applying a pragmatic analysis to two-party conversations. In Study IA, a subgoal achievement label was applied to each talking turn of 93 automatically tape recorded telephone conversations between native English-speaking beauty salon receptionists and one confederate female caller trained to play a standardized, non-leading role in getting an appointment for a haircut. Chi square tests showed that these conversations have a subgoal structure and that some structures are more prevalent than others. Regularities were attributed to social and organizational problems that appointment-making presents.

Study IB obtained acceptable inter-rater reliability values of the Study IA structural assignments using a trained independent male observer whose agreement with the researcher was assessed.

Study IIA failed to provide evidence for knowledge of conversational subgoal structure among 83 female native English speakers who attempted to resequence two transcribed and scrambled Study I conversations.

In Study IIB, fifty-three native English-speaking females rated three versions of both Study IIA conversations for naturalness. Chi square tests confirmed that the subjects could reliably select the naturally occurring ones. The results are attributed to successful engagement of knowledge about conversational subgoal structure.
In a test of the methodological and theoretical generalizability of Study IA, Study IIIA applied the subgoal structural analysis developed in Study IA to a set of 59 recorded telephone appointment-making conversations between acquaintances collected from one beauty salon. Chi square tests demonstrated that subgoal structure exists within this set and that some structures occur more frequently than others. These results confirmed predictions from Study IA data. Those predictions were based on the idea that conversational regularities are due to the operation of social and organizational factors that influence conversational goal pursuit.

Study IIIB generated inter-rater reliability values for the Study IIIA structural assignments using the same trained independent observer from Study IB. High levels of agreement were obtained.

Overall, the research supported the conclusion that it is meaningful and useful to view conversations and the knowledge conversationalists have of them from a pragmatic perspective. A variety of extensions of this research are discussed.
ACKNOWLEDGEMENTS

I would like to thank the members of my supervisory committee for the time and assistance they devoted in support of my endeavours. As well, I am grateful to Ross McMillan for serving as Observer 2 in Studies IB and IIIB, and to Raymond Corteen for participating as the "third independent party" in Study IA.
# TABLE OF CONTENTS

## PRELIMINARY PAGES

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ii</td>
<td>Approval Page</td>
</tr>
<tr>
<td>iii</td>
<td>Abstract</td>
</tr>
<tr>
<td>v</td>
<td>Acknowledgements</td>
</tr>
<tr>
<td>xli</td>
<td>List of Tables</td>
</tr>
</tbody>
</table>

## CHAPTER 1. INTRODUCTION

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

### RESFARCH DOMAINS

Arguments Against Adopting the Syntactic or Semantic Domains

- Syntax: 4
- Semantics: 6
- Pragmatics, Non-natural Meaning and the Co-operative Principle: 11

### PSYCHOLINGUISTICS AND THE THIRD DOMAIN

- 27
Selecting Spoken Conversations as the Object of Research. .................. 38
RESEARCH COMMITMENTS. .................................. 43
Subgoal Analysis. ............................................. 45
Subgoal Structure and Knowledge of It. .................. 51
Subgoal Structure and Social Activities. .................. 61
AN OVERVIEW OF THE RESEARCH. .................. 63

2. STUDY I PART A: CONVERSATIONAL STRUCTURE. ........... 69
INTRODUCTION. ................................................. 69
METHOD. .......................................................... 70
A. Generating the Conversations. ....................... 70
B. Screening Conversations and Making
   Transcriptions. ...................................... 72
C. Structural Categories in the
   Conversations. ...................................... 75
D. Illustrations of Structural Categories
   in the Conversations. ............................... 85
E. Assumptions Underlying Structural
   Analysis. .............................................. 86
RESULTS. .......................................................... 93
A. Obtained Sequences and Possible
   Sequences. ............................................ 93
B. Conversational Structure. ................................ 97
C. Conversational Preference. ............................... 97
DISCUSSION. ................................................... 98
3. STUDY I PART B: INTEROBSERVER RELIABILITY SCORES
   FOR STUDY IA ........................................ 104
   INTRODUCTION ........................................ 104
   A. Observer Training and Data Collection .................. 104
   B. Scoring Agreement .................................. 106
   RESULTS ............................................. 109
   DISCUSSION .......................................... 109

4. STUDY II PARTS A AND B: RESTRUCTURING TASKS AND NATURALNESS RATINGS. .................. 111

5. STUDY II PART A: RESTRUCTURING TASKS. .................. 112
   INTRODUCTION ........................................ 112
   METHOD ............................................. 113
   RESULTS ............................................. 119
   DISCUSSION .......................................... 123

6. STUDY II PART B: NATURALNESS RATINGS. .................. 131
   INTRODUCTION ........................................ 131
   METHOD ............................................. 131
   RESULTS ............................................. 133
   DISCUSSION .......................................... 138

7. OVERALL DISCUSSION OF STUDIES IIA AND IIB .......... 139
8. STUDY III PART A: SUBGOAL STRUCTURE IN NATURALLY OCCURRING CONVERSATIONS

INTRODUCTION. ........................................ 144
METHOD. ............................................. 145
A. Collecting and Transcribing the Conversations. ........................................ 145
B. Screening Conversations. ........................................ 146
C. Participant Characteristics. ........................................ 148
RESULTS. ............................................. 149
DISCUSSION. ........................................... 160

9. STUDY III PART B: INTEROBSERVER RELIABILITY SCORES FOR STUDY IIIA ........................................ 167
INTRODUCTION. ........................................ 167
METHOD. ............................................. 167
A. Observer Training and Data Collection. ........................................ 167
B. Scoring Agreement. ........................................ 170
RESULTS. ............................................. 170
DISCUSSION. ........................................... 172

10. FINAL DISCUSSION. ........................................... 174
Relating the Data to Pragmatic Principles. ........................................ 176
Generalizability. ........................................... 190
Future Research Directions. ........................................... 207
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Obtained and Possible Category Sequences for 93 Conversations.</td>
<td>94</td>
</tr>
<tr>
<td>2</td>
<td>Frequencies of Obtained Card Sequences for the &quot;Oak&quot; Conversation.</td>
<td>120</td>
</tr>
<tr>
<td>3</td>
<td>Frequencies of Obtained Card Sequences for the &quot;Irene&quot; Conversation.</td>
<td>121</td>
</tr>
<tr>
<td>4</td>
<td>Frequencies of Obtained Ratings for Three Forms of a Conversation.</td>
<td>134</td>
</tr>
<tr>
<td>5</td>
<td>Frequencies of Obtained Form Orderings.</td>
<td>136</td>
</tr>
<tr>
<td>6</td>
<td>Numbers of Conversations Held by Each of Four Callees.</td>
<td>148</td>
</tr>
<tr>
<td>7</td>
<td>Numbers of Conversations Held by Callers of Both Sexes.</td>
<td>149</td>
</tr>
<tr>
<td>8</td>
<td>Obtained and Possible Category Sequences for 59 Conversations.</td>
<td>155</td>
</tr>
</tbody>
</table>
| Table 9  | Numbers of Conversations Having One  
or More Element. | 159 |
INTRODUCTION

RESEARCH DOMAINS

The overall motivating interest that guides the direction of this dissertation is a desire to contribute to an understanding of the mental processes and structures that are explanatory of language comprehension. One general approach within this area involves searching for regularities in the products of the utilization of those mental structures. The characteristics of such regularities are taken to be indicative of the nature of the internal processes and structures that gave rise to them. However, there are a multitude of types of regularities, and thus, decisions need to be made concerning what aspect of language is to be examined for regularities and from what conceptual framework a descriptive vocabulary is to be taken.

In making these decisions, it is helpful to begin by examining what Winograd (1980) calls "domains". Consider the utterance, "Could you tell me what time it is?". Following Winograd, there are three perspectives from which to view the "you" here, and they correspond to three separate domains. If one is interested in the relation of
one part of the utterance to the others, "you" would be labeled "noun phrase," "subject," "agent" or "argument," depending on what theoretical orientation is favored (cf. Chomsky, 1957; Fillmore, 1968 Lakoff, 1970). If, on the other hand, one is interested in the relationship between utterance parts and what they pick out in the world, "you" becomes "the addressee". For the purposes of this dissertation, Winograd's last domain takes on a special significance. He calls it "the domain of human action and interaction". From this perspective the question, "Could you tell me what time it is?", is a request for information and "you" fills one value of the three that requests in general are composed of: X (1) requests that Y (2) do act Z (3). (See Clark, 1979).

Clearly, each domain commits the researcher to assumptions about what to describe and how best to refer to it. Settling on what commits one to a domain that will yield regularities whose actual description will be dependent on the choice of systematized referring expressions. It is important then, to detail the assumptions of each domain before proceeding to attempt to apply a domain's perspective to a psychological analysis of language. In what follows, we present a more detailed account of domains. The present aim is to provide an argument in favor of working within the domain of human
action and interaction. It is argued that the discovery of regularities in this domain will yield insights into the nature of the mental processes and structures that interpret and produce linguistic objects.

1. The domain of linguistic structure: **Syntax**

From this perspective, descriptions are applied to linguistic objects and an effort is made to discover regularities in the relationship of these objects to each other.

2. The domain of correspondence between linguistic structures and the world: **Semantics**

From this perspective, regularities are sought in the relationship between linguistic structures and the states of affairs to which they correspond.

3. The domain of human action and interaction: **Pragmatics**

From this perspective, descriptive terms label what speakers did or intended to do by speaking. Regularities are sought with regard to the interconnections between personal and interpersonal action as well as between the
speaker and the linguistic object.

The first two domains have made important contributions to linguistics, the philosophy of language, and psychological models of comprehension (Clark and Clark, 1977; Garnham, 1985; Fodor and Bever, 1965; Miller and McKea, 1964; Rips, Shoben and Smith, 1973; Rosch and Mervis, 1975; Rumelhart, 1975, 1976; Kintsch, 1976; Clark and Lucy, 1975). But an examination of some recent developments in all three disciplines will highlight advantages of focusing on the third domain.

Arguments Against Adopting the Syntactic or Semantic Domains

With regard to linguistics and the philosophy of language, there has been a minor revolution over approximately the last ten years that has resulted in a concentrated effort to develop an adequate pragmatic theory. This revolution has been motivated, in part, by the belief that adequate syntactic and semantic theories are dependent on a pragmatic theory (cf. Levinson, 1983; Gazdar, 1980; McCawley, 1978).
Syntax

Chomsky (1957) maintained that it was possible to develop an autonomous syntactic theory. For him, language viewed as an instrument for the expression of meaning requires no reference to either semantics or the occasion of the instrument’s use. More recently, theorists who share with Chomsky the goal of creating a generative grammar (i.e., one that creates in a purely formal manner all the acceptable and only the acceptable sentences of a language) have expressed doubts about being able to separate syntax from pragmatics (Gazdar, 1980). An illustration of the kinds of difficulties encountered in attempts to separate syntax from pragmatics is to be found in the transformation that Ross (1975) calls slifting. Slifting is a purely syntactic concept that results, for example, in conversions of "I take it that you are a Martian" to (the acceptable) "You are a Martian, I take it". Unfortunately, the transformation cannot be applied successfully, for example, to "I want Dave to tell me when dinner will be ready" because it yields the unacceptable "When will dinner be ready, I want Dave to tell me". Ross concludes that it is impossible to eliminate unacceptable sentences in English as products of a generative grammar unless the transformation of slifting is restricted in a certain manner to sentences that are requests by the speaker for
information from the addressee. In other words, Ross suggests that an adequate generative grammar requires pragmatic and syntactic rules to be interspersed, and he proposes to call the study of this component \textit{pragmantax}.

\textbf{Semantics}

Because what follows is biased in favor of the pragmatic perspective, it must be emphasized that it would be a mistake to conclude that semantics, taken here to be truth-conditional semantics, has not made a significant contribution to philosophy, linguistics, and psycholinguistics (Bever, 1970; Schank, 1972; Bierwisch, 1970). Also, arguments from pragmatists have not gone unchallenged by semantic theorists. It is difficult to do justice to the complexity of the problems here, but a brief discussion is in order.

Arguments in support of the idea that an adequate theory is impossible unless one is willing to include a pragmatic component as an integral part are more numerous and wide-ranging within the domain of semantics than are the arguments offered within the domain of syntax (cf. Brown and Yule, 1983; Levinson, 1983; Wilson, 1975). In general, arguments supportive of including a pragmatic component in a semantic theory are based on Grice's (1957)
landmark theorizing about the nature of linguistic meaning (to be discussed shortly). These arguments lead to the following conclusions: meaning is not attributable only to sentences, but to sentence users as well; sentence users can mean different things on different occasions even when they speak the same sentences; and sentence truth conditions are not immutable.

Truth-conditional semantics equates a theory of meaning with a theory of truth (Lyons, 1981; Garnham, 1985). That is to say, its goal is to specify in a deterministic manner the unvarying conditions, or states of affairs, under which sentences of a language are true or false. Truth-conditional semantics attempts to specify the logical entailments of sentences as well, since these follow from the truth conditions. Further, in truth-conditional semantics the meaning of a sentence is independent of the occasion of its use.

There are a number of criticisms that have been levelled against truth-conditional semantics by those with a pragmatic orientation. One criticism is that it is speakers, not words, who refer, and speakers, not sentences, who mean (c.f. Brown and Yule, 1983). Another important criticism is that there can be occasions on which there is a discrepancy between the truth conditions of a
sentence that make it true and the actual state of affairs, yet the speaker is not taken to be speaking falsely. Saying "what a beautiful day" when it is raining out would be an example. The speaker is speaking truthfully, but not literally.

Discrepancies between what a sentence literally means and what the speaker meant in uttering the sentence are characteristic of much of everyday speech; they are not bizarre examples. Correct interpretations in these cases depend in complex ways on the operation of context. Another example is "It's awfully hot in here," which outwardly describes a state of affairs in the world concerning the temperature in a certain spatial location. But under the appropriate circumstances it could very well describe a different state of affairs (have a different propositional content)—one in which the speaker desires the addressee to open the window (literally expressed as "I want you to open the window"). We will argue that trying to maintain that the only thing a sentence does is to describe states of affairs in the world is probably misguided. This and similar examples are better handled by distinguishing between what is directly done by the speaker in producing the sentence (e.g., describing or conveying information) and what is indirectly done (e.g., requesting). The same distinction has been captured by Austin (1975) in terms of
the difference between the *propositional content* of a sentence and its *illocutionary force* (see below).

To further illustrate indirect communication, consider the examples of two very common types of communicational meaning: metaphor and irony. Metaphor is the application of a phrase or word to that to which it does not apply literally. Examples are "the sun danced on the waves" and "food for thought". Irony occurs when words or phrases having one literal meaning are used to convey exactly the opposite meaning, as when someone says "what a beautiful day" in the presence of a downpour. Semantic theories account for the non-literal meanings in these cases only with difficulty (Levinson, 1983; Searle, 1979): in the case of irony, they restrict themselves to context-free meaning, which is difficult in principle to specify; in the case of metaphor, they either blur the distinction between knowledge of word meaning and general knowledge of the world, or they reduce metaphors to cases of simile.

Perhaps the most telling criticism of truth-conditional semantics is the claim that the truth conditions of a sentence depend on the context in which it occurs. It should be stressed that the ability of a semantic theory to make truth value assignments serves as a test of the
theory's ability to capture regularities in the relationship between linguistic objects and the states of affairs those objects pick out in the world. Consider, however, the following (Levinson, 1983):

I am now sixty-three years old.

Contrary to a truth-conditional view, it would appear that the occasion of the sentence's use specifies who said it and when, and more importantly, that these are necessary specifications in the determination of the sentence's truth value. Theorists who adopt a truth-conditional semantics (cf. Katz, 1977; Lewis, 1972) have attempted to meet the challenge that examples of this sort set by relativizing truth to specific times and people. For example, if the sentence above is true today, it cannot be true if said by the same person eighteen months from now; although it is not true if spoken by my father today, it was true if he said it six years ago, and it is true if spoken today by Joe Bloggs. However, there are serious problems with this tactic.

First, it eliminates the abstract, meaningful sentence as the bearer of truth or falsehood. Only the utterance—the sentence in the context of a speaker, a time, and a place—can be assigned a truth value. No sentence is
without some context, and as contexts change so do interpretations and truth values. For example, "what a beautiful day" said on a sunny day means exactly what it says. Second, even if one were willing to dispense with the concept of idealized immutable sentence meaning, it can be shown (Levinson, 1983) that there can be an indefinitely long list of contextual reference points relative to which truth values are assigned. This makes truth value indeterminate. Finally, some words and expressions like "well", or "at any rate", or "oh" do not seem to have any meaning at all, so they are unable to affect the truth conditions of sentences they participate in. Rather, they do things like connecting adjacent utterances or qualifying the relevance of an utterance.

In summary, pragmatists have pointed to three general difficulties with truth-conditional semantics: speakers, not just sentences can mean, speakers can mean something different from what sentences express; and sentence truth conditions depend on the relation between the speaker and the sentence. Pragmatists have proposed a model of utterance meaning that is based on the concept of non-natural meaning and the Co-operative Principle. We turn next to a consideration of these two central building blocks of a pragmatic theory.
Pragmatics. Non-natural Meaning and the Co-operative Principle

The critical distinction between sentence meaning (sometimes called "literal meaning") and speaker meaning was analyzed initially by Grice (1957) and explicated in terms of the distinction between natural meaning and non-natural meaning (meaning-nn). (The distinction is related to Strawson's [1950] claim that it is speakers, not linguistic expressions, who mean.)

Meaning-nn is meaning conveyed in deliberate communicative linguistic acts. Non-natural meaning contrasts with natural meaning that does not involve an agent's intention. For example, spots mean measles naturally. Levinson (1983, p.16) paraphrases the definition of meaning-nn as follows:

\[ S \text{ meant-nn } z \text{ by uttering } U \text{ if and only if:} \]

(i) \[ S \text{ intended } U \text{ to cause some effect } z \text{ in recipient } H \]

(ii) \[ S \text{ intended (i) to be achieved simply by } H \text{ recognizing that intention (i) } \]
S stands for speaker, H for hearer, U for a linguistic object like an utterance, or a string of utterances, and z for a belief or volition invoked in H.

An example of natural meaning would be a yawn. It is a sign that (naturally) means the yawner is tired. The utterance, "I'm tired", is a signal that (non-naturally) means the speaker is tired. Both the yawn and the utterance can induce in the addressee identical beliefs, but only the second counts as genuine communication wherein a sender-speaker intends the addressee to form a particular belief. By expressing the attitude that the speaker is tired, the speaker (usually) gives the addressee good reason to formulate the belief that the speaker is tired. But why should the belief be formulated? Partly because (usually) people do not say "I'm tired" unless they believe that they are and they intend addressees to come to believe that they are.

Given the concept of non-natural meaning as the meaning that is involved when people converse, then it follows that:

1. The conveying of linguistic meaning consists of a
sender-speaker intending or desiring or wanting to do something, namely to cause a receiver-addressee to think or want or more generally, to do something;

and

2. The speaker intends to achieve goals, in part, by having the addressee recognize what the speaker wants the addressee to do.

Meaning-accounts, in part, for the implicitness of everyday speech—how more can be meant than what is said—by identifying speaker meaning with speaker intention. For example, if a speaker says "It's late", the intention may be to induce a belief in the addressee regarding the time, but (alternatively or additionally) it could function to request that the addressee to go home. There is a potential problem here, however: which is the speaker's intention and how is the addressee enabled to recognize it? This is a serious problem since there may be many more than two intentions to select from (some commentators have claimed that there are an infinite number [cf. Power, 1984; Slugoski, 1985]).

Clark (1985) refers to this problem as the co-ordination problem. The co-ordination problem, from the
speaker's point of view, is how best to get what is said in line with the interpretation the addressee will draw from it, or how to get what the speaker means in line with what the addressee takes the speaker to mean. One way of accomplishing what one desires to accomplish is to use conventional linguistic expressions (Lewis, 1969). These are words or utterances used regularly by speakers of the language to accomplish specific intended goals. Both speakers and addressees know about them and they expect each other to adhere to them; this is why they "work". Conventional forms also limit the possible implicit intentions an addressee can reasonably attribute to a speaker.

At least some theorists consider a solution to the co-ordination problem based on conventions to be unsatisfactory (cf. Clark, 1985; Slugoski, 1985; Levinson, 1983; Sperber and Wilson, 1986). Solving the co-ordination problem via conventions neglects four of Grice's fundamental insights: (1) that conventional forms do not always exist; (2) that some forms do not have conventional meanings; (3) that the conventional meaning of a form is not always the intended one; (4) and that forms can be used in non-conventional ways. Essentially, linguistic creativity is ignored by a solution based on convention.
Grice's own solution to the co-ordination problem derives from a consideration of what is inherent in efficient, rational, co-operative, human exchanges—both linguistic and non-linguistic. As such, it concerns general principles of language use. Grice claimed that during efficient communication, speakers follow and addressees assume that speakers follow the Co-operative Principle (Grice, 1975):

Make your contribution such as required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

Grice divided the general principle into a set of four norms or maxims (taken from Garnham, 1985):

1. Maxim of Quality: say only what is true and what you know to be true.

2. Maxim of Quantity: say no more and no less than what is required.

3. Maxim of Relation: be relevant.
4. Maxim of Manner: be perspicuous (be brief and orderly, avoid obscurity and ambiguity).

If speaker and addressee mutually assume that the Co-operative Principle is being followed, then the meaning that the speaker intended by saying X will, in many cases, be clear to the addressee (see Sperber and Wilson, 1986, for the explicit argument of how this is possible). For example, in this exchange between A and B, B interprets A's utterance as a request for help, and A interprets B's utterance as a fulfillment of that request.

A. I'm out of gas.

B. There's a gas station around the corner.

A's communicative intention is achieved because A can rely on B assuming that A, within this particular purposeful exchange, cannot simply be intending that A desires B to come to believe that A is out of gas. B reasons that if A is following the Co-operative Principle (and B assumes A is doing so), then A could not have intended to cause in B effect Y (believing that A is out of gas); A could only have intended to cause in B effect W (possibly, believing that A needs help in getting gas). Likewise, if B's reply is consistent with the direction of the talk exchange (and A assumes that it is), then it
follows not only that B believes that there is a gas station around the corner, but also that B believes that it can supply B with gas (it is not closed, the underground tanks are not in the process of being replaced, etc.). If this were not the case, then B's reply would not qualify as co-operative, but A assumes that B's reply is ordinarily co-operative, and so it fulfills A's request for help.

Of course, the maxims of the Co-operative Principle are not always followed. They can be deliberately violated as when, for example, someone lies and, unknown to the addressee, fails to adhere to the Maxim of Quality. Furthermore, they can be flouted; that is, S does not follow the Co-operative Principle, S intends the addressee to recognize this, and the addressee recognizes that S intends the addressee to recognize this. For example, if S says "That's a very clever remark", when it is obvious to both S and the addressee that it is not a very clever remark, the Maxim of Quality has been flouted by S: S has said something other than what S knows to be true, S intends that the addressee recognize this, and the addressee recognizes that S intends that the addressee recognize that S has said something other than what S knows to be true. The consequence is that the addressee interprets "That's a very clever remark" as "That's not a very clever remark".
The notion that truth conditions do not exhaust the possible meanings of an utterance is captured in the concept of implicature (Grice, 1975). Implicature accounts for the mechanisms whereby a speaker can "suggest", "imply", "really mean", "hint at", etc., in contrast with "literally say". Implicatures cannot be generated as logical consequences of the semantic content of sentences. They seem, instead, to rely on speakers and addressees assuming in a mutual way that certain strategies that are derivative of the co-operative principle and the maxims will be used for achieving communication. As such, implicatures are examples of linguistic phenomena that are handled best within the domain of pragmatics.

In order to specify more precisely what is at issue here, it is helpful to consider problems posed by the linguistic phenomena of metaphor, irony, presupposition, and inference that are believed to be unsolvable within traditional semantic theories that attribute meaning exclusively to words and sentences (Levinson, 1983). The pragmatic approach to solutions has implications for psychology because the phenomena that give rise to the problems are characteristic of the common linguistic communications that we hold with other people. What these communications share with each other is that what is meant
(by speakers) goes beyond what is expressed in the words or sentences that they use.

**Metaphors** like "the sun danced on the waves" involve implicatures drawn from floutings of the Maxim of Quality (say what is true). Metaphors like "the lion roared" (said of a person) can be analyzed as floutings of the Maxim of Relevance (Sperber and Wilson, 1986). In both cases the analysis proposes that the addressee realizes that the speaker cannot possibly mean literally what the speaker says. What is meant must be computed as an implicature under the assumption that the speaker is following the co-operative principle in a general way.

The example of irony—"what a beautiful day"—is also an instance of the flouting of the Maxim of Quality on some analyses: the addressee again assumes that the speaker adheres to the co-operative principle in a general way, and since it is obviously not a beautiful day and the speaker is for that reason not engaging in deceit, then the speaker is taken to mean the opposite of what the sentence expresses.

A **presupposition** is a proposition that is taken for granted. For instance, "My uncle is coming from Scotland" presupposes that the speaker has an uncle. Arguments have
been advanced to the effect that it is speakers who presuppose (not sentences), that presuppositions are not logically entailed by the semantic content of sentences, nor are they invariant under separate contexts of usage (Kempson, 1975; Wilson, 1975); especially, they are "defeasible", or cancelable in contexts. This makes them difficult for semantic theories to handle. Promising pragmatic accounts of the phenomenon rely on an application of a modified Maxim of Relevance (Wilson and Sperber, 1979). What is presupposed is whatever is not relevant in the sense of being undeniable or unquestionable.

Another intractable phenomenon for truth-conditional semantics is that of inference. The term has been used in several overlapping ways. All types of inference have in common the properties of not being explicitly stated, of not being logically derivable from semantic content, of being context-dependent and therefore mutative, and of being drawn by the addressee (which distinguishes them from presuppositions). As well, they rely on the addressee's knowledge about how the world usually operates--both the physical world and the socio-cultural one. Again, these properties make them troublesome for semantic theories.

Consider an example of inference from Brown and Yule (1983): "John was on his way to school." This has the
following logical entailments: someone was on his way to school; John was on his way to somewhere; and someone was on his way to somewhere. But most readers of the original sentence also infer that John is a schoolboy, which is not a logical entailment. It depends on world knowledge and it can be cancelled if the following sentence occurs later: "Last week he had been unable to control the class." It remains controversial whether or not inferences are always a part of what is communicated in Grice’s sense of meaning-\textit{nn}. This would be an empirical claim about mental structures (see Brown and Yule, 1983 and Garnham, 1985). Pragmatists (cf. Atlas and Levinson, 1981; Sperber and Wilson, 1986) account for inferences such as this one by invoking a "principle of informativeness" or a "principle of relevance." These principles specify that the addressee read as much into an utterance as is consistent with what the addressee knows about the world.

A somewhat different approach to solving the co-ordination problem is that of speech act theory. It is related to the perspective provided by Grice’s work because Grice focused on the language user as the medium of meaning and speech act theory focuses on an analysis of the uses to which language can be put. (It should be noted at the outset that many theorists argue that speech act theory can be incorporated totally within Grice’s concepts of
meaning-nn and the Co-operative Principle, and therefore, that it is not a theory of particular importance (cf. Levinson, 1983, p. 241). The earliest statement of speech act theory is credited to John Austin (1962) and its subsequent development is due to the work of John Searle (1969); Clark (1985) and Levinson (1983) provide summaries.

Austin's insight was that it is very difficult to maintain that the only thing a meaningful sentence can do is to assert. For instance, "I bet you five dollars that it will rain this afternoon" does not describe a state of affairs in the world. Accordingly, it can never be true or false, but it does constitute a commitment on the part of the speaker and it can "go wrong"—the speaker might not actually intend to pay up if it fails to rain. If sentences (or better, speakers who use sentences) do not always describe states of affairs in the world, it is necessary to explain what it is that they do do. In essence, what is needed is a list of what varieties of Gricean intentions speakers can entertain toward addressees and give expression to. These are called illocutionary acts (Austin, 1970), referred to as requests, promises, suggestions, offers, and so on. The concept of truth conditions does not apply to illocutionary acts; rather, they can be felicitous or infelicitous: they can be performed under the right set of circumstances and "come off," or if the requisite
conditions are not present the act will "misfire." For instance, for a speaker to request successfully that an addressee do something, the speaker must believe that it is not obvious that the addressee would have done the thing in the normal course of events. Much effort has been expended in trying to create a systematic taxonomy of illocutionary acts and their associated felicity conditions (Searle, 1969; Katz, 1977). Some philosophers have related the particular felicity conditions that characterize specific illocutionary acts to Grice's more general conversational maxims. (cf. Rogers, 1978; Searle, 1969; Katz, 1977).

Because felicity conditions describe what makes an utterance a request rather than a promise or a warning, etc., they help an addressee recognize what the speaker wants the addressee to do. As well, speakers must take the conditions into account when they plan what to say so that it is understandable to addressees. The problem for psychological models, of course, is to explain how very abstract states of affairs such as "speaker wants addressee to do act A" and "addressee is able to perform act A" (two felicity conditions of a request) are signalled. Austin identified illocutionary force with particular verbs like "warn", "tell", "request", and so on, and these might have given a hint to the addressee about the speaker's intentions. Unfortunately, there are a multitude of things
one can say with equivalent illocutionary force without ever using either the verb that does it directly or a particular type of sentence. (Later, when indirect speech acts are discussed, attention will be directed to this issue.)

Speech act theory has not gone unchallenged by truth-conditional semantics (Gazdar, 1979). There have been attempts, for instance, to make felicity conditions of words like "warn", "bet", etc., part of their meaning. When one says "I warn you that....", saying it makes it true. If warning is done indirectly ("Watch out!"), the utterance is taken to have an underlying form of "I warn you that....". Such attempts tend to end in failure. Revisions of speech act theory that aim to include it within truth-conditional semantics fail to capture some of the linguistic intuitions that led Austin to develop the theory in the first place (for instance, that actions can substitute for linguistic objects). Revisions also have difficulty with indirect speech acts unless they make heavy reliance on inferencing procedures which are inherently pragmatic. (See Levinson, 1983 for a review of syntactic and semantic problems associated with a truth-conditional analysis of speech acts.)

The above discussion has outlined the basic concepts
underlying a pragmatic analysis of language, and it has shown how these concepts can be used to account for a wide range of linguistic behavior. We have suggested that a pragmatic approach to conversation appears to be most likely to reveal insights into a psychology of conversation. The basic theoretical points that arise from a pragmatic perspective (Gazdar, 1980; Thompson, 1977; Morris, 1938) and that are the most relevant to the present dissertation are:

1. Speaking meaningfully requires entering into a relationship with another person (the addressee) wherein

2. The purpose of speaking is to effect some internal or external action on the part of the addressee. The speaker and addressee expend co-ordinated cognitive effort to this end.

3. The action the speaker intends to effect is achieved by adhering to mutual expectations about how one ordinarily goes about it.

4. Actions can be (and often are) effected indirectly, which is to say that the speaker can convey intentions and have them carried out by relying on what the addressee should reasonably be expected to know beyond the syntactic
structure and semantic content of an utterance.

The advantage of a pragmatic approach over (especially) a truth-conditional semantic one is that it promises to be able to account for the implicitness of much ordinary linguistic communication. This is apparent in the ability of pragmatics to deal more effectively with problems that truth-conditional semantics has found to be intractable. Rather than treat language as an idealized, abstract symbol system that has uses, pragmatists consider language from the perspective of social instrument, so that its functions are viewed as served by the symbol system. In the next section we will try to show that a pragmatic orientation offers a potentially fruitful basis for empirical research into language comprehension.

PSYCHOLINGUISTICS AND THE THIRD DOMAIN

We have argued that areas that have been considered autonomous within linguistics and the philosophy of language—syntax and semantics—have been shown to be dependent on a description of regularities within pragmatics. In keeping with the practice of maintaining an interdisciplinary orientation, what must be demonstrated next is that the third domain provides some useful
directions for psycholinguistics as well. This enterprise is an elaboration of Clark’s (1985) claim that any theory of language that fails to take into account the social function of language is bound to be inadequate (also, see Bennett, 1976).

We can start by summarizing empirical research that has dealt with some puzzling phenomena in comprehension. In general, we will claim that an adequate explanation of these phenomena will need to be based partly on the four pragmatic principles described in the section above.

There are many ways of describing the same entity, but not all of them will be helpful to the addressee. "The man in the blue suit," "my neighbor," "George," "Mr. Sims," "that man," "him," and so on, could refer to the same thing. How are addressees enabled to work out what speakers are selecting to talk about (Clark, 1985)? This is the problem of reference. While successful accounts of reference will be based partly on an analysis of syntactic structure and semantic content, these factors are not sufficient. For example, although there are syntactic constraints that allow "John" and "he" to refer to the same individuals in the first sentence, these same words must refer to different individuals in the second sentence (from Garnham, 1985):
Before he went into the meeting, John straightened his tie.

He went into the meeting before John straightened his tie.

One could argue that in certain cases, such difficulties may be avoided by appealing to semantic analyses. For example, the following sentences (Garnham, 1985) contain pronouns whose references may be determined by the semantic content of the verbs, the subjects, and the objects:

John sold Bill his car because he hated it.
John sold Bill his car because he needed it.

In opposition to this claim, it might be argued that the semantic content of "selling" does not restrict the motivational characteristics of the individuals involved in the activity—rather, it is the comprehender’s knowledge of the world that allow the pronouns to refer.

In addition to syntactic, semantic, and real world knowledge, complete accounts of reference will need also to rely on representations of what the speaker knows the addressee knows about the world in general, what the
addressee knows because the addressee or the present
speaker just talked about it, and what the addressee knows
because it is presently within the mutually attended
perceptual field (Olson, 1970; Clark, 1985). Consider the
following example (modified from Garnham, 1985):

A man walked into a room and stopped near the window.
It was slightly open. A large statue stood in the middle of
the room.

The best accounts for the use of indefinite
descriptions like "a man," "a room," and "a large statue,"
in contrast with definite descriptions like "the window"
and "the room," make use of the idea of mental models built
by addressees as they comprehend. The speaker here uses
definite descriptions only when the speaker can take for
granted that what is being referred to is in the
addressee's mental model either because it is common
knowledge that something is the case (for instance, that
rooms have windows), or because the speaker previously
mentioned something that should now be incorporated within
the model (for instance, the room). Indefinite
descriptions, like "a man," "a room," and "a large statue,"
are given to entities that the speaker believes are not in
the addressee's mental model.

It should be clear from this brief discussion of the
intricacies of reference that pragmatics has a central role
to play in explanations of production and comprehension. In
speaking sincerely (as opposed to deceitfully or misleadingly), speakers use a referring expression they believe the addressee can use to figure out uniquely what entity is being selected. In other words, speaking is tailored to addressees for the purpose of getting them to do things. Co-ordinated cognitive effort is required to the degree that speakers implicitly and unconsciously assess what they need to say from the addressee's point of view while still accomplishing their own goals; for their part, addressees implicitly and unconsciously compute what, from the speaker's point of view, was intended to be picked out with the restriction that speakers will not try to pick out something addressees do not know about or cannot identify uniquely. This way of viewing reference illustrates the application of the first and second pragmatic principles (namely, that speaking meaningfully requires entering into a relationship, and that the purpose of speaking is to effect an action).

Another illustration of the importance of pragmatics is found in bridging inferences. This expression refers to information that is neither explicitly stated in a sentence nor the product of logical entailment, but which must be added by addresses if they are to comprehend (Clark, 1985; Clark, 1975; Garnham, 1985). For instance, the sentence "The beer was warm" may be presented in one of two
preceeding contexts: "We got some beer out of the trunk" or "We checked the picnic supplies". People take longer to read the target sentence when it is placed in the second context (Haviland and Clark, 1974). This is not due to the fact that the word "beer" was mentioned in an earlier sentence since a non-specific mention of "beer", as in "Andrew was especially fond of beer", also slows reading time for "The beer was warm." Instead, it is suggested that in the latter context, comprehension requires the forming of the bridging inference, "Beer can be a picnic supply", and making this inference takes time. Speakers do use utterances that can be understood only if addressees make bridging inferences, and addressees typically do comprehend such utterances. This seems possible only if speakers rely on what the addressee can reasonably be expected to know about how the world operates and if addressees fall back on that knowledge in order to compute what was meant (specifically, what the not previously mentioned definite reference, "the beer", must uniquely and determinately be referring to). Speakers choose their words for good reasons from their own point of view and from that of their addressee. Both parties to the exchange behave as though they mutually believe this to be true.

The distinction between psychologically given and new information is a useful way of thinking about the
difference between definite and indefinite referring expressions. Consider the distinction between given and new information as it applies to the difference between the active and the passive voice. Active sentences like "the boy is patting the cat" and passive sentences like "the cat is being patted by the boy" traditionally have been assigned the same semantic or propositional content. The question arises, then, why should speakers bother to use one form rather than the other? The fact that addressees make a distinction between what the two sentences are "about" (Clark and Clark, 1977) suggests that the active and passive are chosen by speakers in order to accomplish separate things. In using the active sentence the speaker takes for granted (provides "given" information from both the addressee's and speaker's point of view) that what "the boy" picks out is in mutual mental focus, and attempts to add information that is new from the addressee's point of view. A paraphrase would be: "this entity we both already know about is engaging in the activity designated by 'patting the cat;' the last is something I (the speaker) believe you (the addressee) did not know about before." For the passive form, the given-new relationships are the reverse.

It is difficult to explain addressee sensitivity to different ways of expressing "the same thing" unless one is
willing to appeal to the idea that sentences have functional differences (Clark, 1985). This in turn derives from the contention that sentence users have purposes in mind when they speak. Co-ordinated cognitive effort and mutual knowledge is in evidence here because speakers use devices they believe addressees know about (like the active and passive), and they use referring expressions to pick out what is in common mental focus in order to indicate what the addressee is intended to do. For their part, addressees assume that speakers are asking them to do what is possible and reasonable, for instance, to distinguish between the passive and active, to draw conclusions on that basis about what is given and what is new, and to locate within common mental focus what the speaker's referring expression intends the addressee to locate. From this perspective, it is not at all surprising that the most promising accounts of the given-new distinction exploit syntactic structure and semantic content to determine what a sentence could possibly be about, and then they apply pragmatic principles to determine what can be concluded concerning what the sentence actually is about (Levinson, 1983; Atlas and Levinson, 1981).

The third pragmatic principle (namely, that the action the speaker intends to effect is achieved by adhering to mutual expectations about how one ordinarily goes about it)
can be illustrated most clearly by considering the phenomenon of indirect speech acts (Searle, 1975a; Searle, 1975b). They serve as examples of other principles as well. More than one thing can be said in order to accomplish a given communicational goal. There is no simple correlation between verbs and intended actions or between sentence form (question, assertion, etc.) and intended action. Thus, under the right set of circumstances, any one of the following could be used to request an addressee to shut the door (Levinson, 1983):

I want you to close the door.

Can you close the door?

It might help to close the door.

How about a bit less breeze?

Okay, Sue, what am I going to say next?

For models of comprehension, the problem posed by such examples is to account for how addressees recover the appropriate implicit illocutionary force. One possibility is that addressees use rules of inference derived from Grice's co-operative principle to work back to the
intended force. On this view (Clark, 1979), there would need to be an inference "trigger" alerting the receiver, for instance, not to take the literal question seriously in the second example above. Specifying triggers and rules of inference in any formal way is not a simple task, especially because they often rely on the notion of "contextual factors". Thus, one likely reason the last example "comes off" is that in the past the addressee neglected to shut the door and the speaker asked her to, then the addressee must just now have left the door open, and so on and so forth.

Clark (1979) has provided some evidence that triggers are sometimes attributable to assumed speaker purposes. For example, if the phone rings and the caller says "Is Bob there?" the reply is often "Hang on". The callee then goes to bring Bob to the phone. Clark has offered the following interpretation of data similar to this fabricated example: the callee fails to answer the direct request for information that the question literally is because the callee assumes that the purpose of the talk exchange cannot possibly be to simply determine the presence or absence of Bob. The callee assumes that the question is somehow relevant (Grice’s Maxim of Relation) so the caller must therefore want to speak to Bob and the callee acts upon that interpretation. This illustrates the application of
the fourth pragmatic principle (namely, that actions can be affected indirectly by relying on what, besides syntactic structure and semantic content, addressees can be expected to know).

Underlying Clark's explanation of how intentions are conveyed indirectly, is the claim that addressees take into account the apparent purpose(s) of the speaker's talk. What the speaker is likely trying to do influences the addressee's interpretation of what the speaker says. However, Clark (1979) argued that there is a complicating factor in the attribution of purpose. It is related to the pragmatic principle that speakers' intentions are effected by adhering to mutual expectations about how to achieve them. Clark derived speaker purposes from a general guideline—"the sorts of relationships people might be expected to enter into with each other on the phone, in the hallway, etc." But the speaker's purpose is also indicated by the form of the utterance. Consider the difference between "Can you tell me the interest rate?" and "Are you able to tell me the interest rate?" (which Clark's confederate asked callees contacted by telephone in a bank). Addressees tend to take the second yes/no question seriously, but not the first one. Because of the "can you", the first question is interpreted as a conventional indirect request for interest rate information and not for
(direct) ability information. The fact that these questions are delivered over the telephone and that they concern interest rates (as opposed to, for instance, bank opening hours, which are generally regarded as less sensitive information) may play a role in determining addressee interpretation of speaker purpose. In summary, Clark interprets his data as supporting the view that what the speaker does overall (request that the addressee do one thing or another) is to some extent correlated with what the speaker does at a lower level (emit particular words in a particular order). In other words, speakers and addressees mutually know about the relationship between linguistic ends and means.

Selecting Spoken Conversation as the Object of Research

Once an orienting "domain" has been selected (in this case, the domain of pragmatics), it is important to make a commitment to an analysis of the comprehension of a particular "linguistic object." One might seek an analysis of the properties of mind by examining written text or spoken speech, single utterances or connected discourse, formal discourse like lectures and speeches or casual discourse like conversations. In this dissertation, spoken conversation was selected as the linguistic object. The
reasons for choosing spoken conversation are based on the 
claim that conversations are basic linguistic objects. 
"Basic" has three meanings that are explicated by 
researchers in linguistics, artificial intelligence, 
psychology, and ethnomethodology.

Linguists concerned about accounting for coherence 
(the intuition language users have that a sequence of 
sentences "go together") have provided support for the view 
that spoken conversation is the basic linguistic object for 
the study of language comprehension. Merritt (1976) argues 
that spoken monologue, and even written text, are 
interactional because both are directed to someone for some 
purpose, and so they may be assigned a pragmatic 
interpretation. Conversation is, however, more overtly 
interactional. If one wishes to take a pragmatic 
perspective to language in order to understand coherence 
better in a general way, one ought to begin by looking at 
clear cases—conversations rather than monologues.

Edmondson (1981) has provided arguments in favor of 
using conversations and against using text as a starting 
point for understanding coherence. He defines text as 
sequenced sentences without regard to their use, and he 
criticizes analyses of coherence that make pragmatic issues 
additive (as opposed to intrinsic) to syntactic issues.
Conversations have a special status for Edmondson. The success of the account he develops of conversational structure, and text and monologue structure as well, was developed using elicited two-party conversations as the basic data to be explained. He claims that examining conversations confers an advantage because findings can be applied to other linguistic objects. Successful applications in the other direction are less certain because pragmatic issues risk becoming additive in analyses of text and monologue.

Hobbs' (1979) work supports Edmondson's claim that conversations should take precedence in an analysis of coherence. His analysis works well for one-party sequential assertions but not for a two-party literal assertion sequence. The problem becomes one of seeing how the literal assertion ever gets interpreted as its true question. Hobbs appeals to the overall purpose of the conversation in order to supply the missing formal link.

Starting from an interest in language comprehension rather than in coherence per se, Levin and Moore (1977) advocate studying conversations for the purpose of constructing models in artificial intelligence. They describe various limitations on research that takes written stories as its subject matter. For instance, stories suffer
from motivational obscurity, multipurpose sentences, indeterminate audiences, and the possibility of having been re-worked several times. This has the consequence that they are more complex than naturally occurring oral conversation.

Winograd’s (1980) arguments for studying conversations are among the most persuasive. He argues that unless we are willing to treat speech as action with consequences for future action for both the speaker and the addressee, we will have little guarantee of success. According to Winograd, as soon as people speak they enter into relationships with other people of obligatory future linguistic and non-linguistic action. Components of these actions include ignoring or taking into account the others’ purposes and shared assumptions. Viewed this way, an analysis of conversation, wherein the "other" is most obviously relevant, as potential commitments become actualized, is a sensible research route.

Clark (1985), a psycholinguist, advocates concentrating on language use in order to understand language comprehension. He notes that traditionally, linguistics and psycholinguistics have focused on the sentence or utterance, occasionally within context, for the purpose of pursuing their respective goals. He claims that in the developmental history of the individual and the
evolutionary history of the species, conversations precede
the appearance of any other linguistic object such as
stories, written text, speeches, and so on. Thus, sentences
owe their existence to their involvement in conversations.
Clark concludes that to understand how language is
comprehended, we must understand how it is used, and to
understand how it is used, we must understand the role that
sentences play in conversations.

Ethnomethodologists, such as Sacks, Schegloff, and
Jefferson (1974), claim that conversations are basic
"speech exchange" systems. Turn-taking is viewed as a
pervasive technique for social organization (as in games,
regulating traffic, serving customers, allocating political
office, talking in debates, interviews, meetings, etc.).
Within speech exchange systems, the attributes of
turn-taking organization specific to the several varieties
of linguistic object (lectures, debates, interviews, etc.)
can be seen as derivative of the attributes of
conversational turn-taking organization.

In an extension of these ideas, Nofsinger (1976)
maintains that conversations have counterparts in more
formal modes of communication. He speculates that, in
addition, conversation is the most prevalent speech
exchange system and that "casual" conversation, which
involves paying relatively little attention to one's own behavior, is for that reason the most fundamental form of language.

In summary, theorists of divergent persuasions have supported the idea that spoken conversations are basic linguistic objects in that they (1) have been shown to provide a research advantage in analytical studies of coherence; (2) are less complex and more prototypical than any other linguistic object; and (3) display most clearly the operation of what is of interest, especially for someone interested in pragmatic variables.

RESEARCH COMMITMENTS

On the basis of a diverse collection of literature in linguistics, artificial intelligence, psychology, and ethnomethodology, four general claims about language use in spoken conversation can be formulated. All four are related to the pragmatic principles described on page 26. Specifically, the research presented in this dissertation is based on, and in part provides supportive evidence for, the following four basic claims:

1. It is meaningful to describe utterances occurring in
two party conversations held for a specific purpose in terms of "what happened", or "what the speaker did", or "what the speaker intended to do in saying what was said". In other words, conversations that have a specific overall goal are composed of speaking turns that are subgoals.

2. Two-party conversations with a specific overall goal have subgoal structure. Once speaking turns are assigned a subgoal description, it will be found that not just any subgoal follows any other. In a metaphorical sense, conversations with an overall goal have a syntax that describes subgoal structure.

3. Conversationalists know about conversational subgoal structure; that is, they know about the syntax of subgoals.

4. Subgoal structure is attributable to the nature of the social activities that conversations are a part of.

For each assertion, an outline of its origins is provided in what follows below. Overall, empirical support of the rigorous variety demanded by modern psycholinguistics is either limited in extent or provided by a corpus of observations that are not taken from conversational data. Part of the aim of this dissertation
is to modify previously employed methodologies and subject matter while remaining within the framework suggested by the research discussed below.

Subgoal Analysis

In this section we attempt to provide a rationale for a central idea developed in this dissertation. Namely, we believe that certain conversations have a subgoal structure in the sense that, first of all, the speaking within them can be assigned achievement labels. Furthermore, the number of observed sequential relations between separate achievement labels will turn out to be smaller than the number of all possible sequential relations.

It has been argued that linguistic objects can be thought of as the products of action or, in the case of on-going conversation, as action itself. It is actions, or the people engaging in them, that can be described as having goals (cf. Edmondson, 1981; Goffman, 1976). These theorists attribute purposes to speaking by emphasizing the continuity between verbal and non-verbal actions in interpersonal settings. Goffman points out that in face-to-face interaction nothing precludes, for instance, answering a request with a physical action, as in showing your watch to someone who has asked the time. Sometimes an
action is the only appropriate reply, as when one is asked to pass the salt. Edmondson argues against the idea that linguistic behavior can always be differentiated from non-linguistic activity.

The continuity between verbal and non-verbal actions is, perhaps, most evident in language acquisition. In some influential and creative work, Bruner (1975, 1983) argues convincingly that the precursors of linguistic reference and predication can be found in actions such as gaze management, reaching, and pointing, all in the context of functional joint action with another person. "Conversation" provides the medium for the acquisition of linguistic expertise, but it is only partly verbal even for the adult who can be seen to do such things as shaking rattles to effect attention-getting. Acquiring a language on this view is a matter of learning context-free conventionalized actions for achieving less uncertain outcomes. As Bruner expresses it (1983, p.37), "It puts pragmatics into the middle of things—the achievement of joint goals provides a matrix within which semantic and syntactic skills are acquired." Elliot (1981) reviews a large number of developmental studies that also suggest that the origin of language can be understood only with reference to the functions of actions in general. There is also evidence for the influence of pragmatic variables on vocabulary.
Speech, of course, is not just action—it is social action. Speech is for others—it has a directional quality unlike random activity. This would account for the fact that it is considered bizarre to engage in too much talking to oneself. Clark (1985, p.1) puts it this way: "Language is a social instrument. When we talk, we direct our words not to the air, but to other people." This attribute of language is also reflected in the fact that even young children modify how they talk according to the characteristics of their addressees (Shatz and Gelman, 1973). Another reason for viewing language as a social activity is that the success of one's own enterprises often involves the conversational mediation of other people. In such cases, the conversation itself is in the service of a higher order purpose, which makes the conversation a subgoal. For instance, when one phones the doctor's office for an appointment, one is removing obstacles to the smooth flow of the future events in life. If the patient were to fail to make an appointment and to simply show up
unannounced, the patient likely would not get in at all.

The language-as-action view is also supported by Winograd (1980) who notes that we often talk about a person's actions as being "meaningful" in the sense of "having a purpose." We also try to "make sense" of other people's actions by attempting to figure out what they are "trying to do." Viewing speaking from the perspective of action suits this analysis. Winograd's example is helpful. It is a piece of fabricated dialogue in which something has gone wrong:

A. I'm thirsty.
B. There's some water in the refrigerator.
A. Where? I don't see it.
B. In the cells of the eggplant.

A has grounds for complaint here, but not because B has spoken untruthfully. The underlying proposition of B's first utterance matches a state of affairs in the world. (This is what most semantic theories interpret truth to be about.) But because B's ostensible purpose in speaking, which is something like "to provide A with information sufficient to relieve A's thirst", turned out not to be B's real one, A has a legitimate complaint. This intuition can be accounted for only by appealing to something other than truth: perhaps reasons, or purposes, or goals.
Some ingenious field experiments carried out by Clark (1979) provide empirical evidence for the idea that speaker goals figure cognitively in addressee assessment of what was said. Clark asked a confederate telephone caller to ask one of two questions of a restauranteur:

Do you accept American Express cards?

or

Do you accept credit cards?

Replies to the first question never included unsolicited lists of cards accepted, but they very often did for the second question. One way of explaining the difference is by concluding that restauranteurs attributed different goals to callers. If the caller mentioned American Express cards she probably had one and wanted to know if she could use it to pay. If she mentioned credit cards in general she probably had more than one credit card and wanted to know if any of the ones the restaurant took matched one of her own. The replies were tailored in ways that were co-ordinated to the goals that the caller signalled.

The claim that goal and subgoal descriptions can capture conversational regularities has received empirical support. For example, Schank (1977) attempted to
characterize the rules for topic shift in conversations. In doing so, he found it necessary to appeal to "conversational purpose" to account for which of several possible rules a conversationalist will choose to follow at any point in the conversation. Nofsinger (1976, 1975) looked at examples of indirect answers and conversational opening devices in an effort to describe rules utterances must adhere to in order to count as instances of the actions in question. Nofsinger claims that the imputation of speaker reasons or intentions is necessary in order to explain coherence relationships and to give the conditions under which utterances can or cannot play the role of conversational opener. In support of Schank and Nofsinger's claims regarding the usefulness of purpose-oriented concepts, Albert and Kessler (1978) demonstrated that the task in which interactants are engaged while conversing influenced the frequency of certain types of statements during conversational closings.

Finally, there are data consistent with the view that, among adults and children, the processing of both linguistic and non-linguistic inputs with higher order overall goals is based partly on what are perceived to be subgoal-directed aspects of the input. Dickman (1963) and Barker & Wright (1971) demonstrated that both trained and untrained observers agree about where to place "episode" or
"happening" breaks in movies that told a story. (In these studies, action was partly conversational and partly non-conversational.) They suggest that agreement about subjective behavioral units represents the perceived orderliness that arises from the human tendency to impute goals and motives to others. The units are meaningful because their terminal points are seen as "intended positions" or "goals". Goal and subgoal structure also figure prominently in Rumelhart's (1976) model of story comprehension. The model describes stories in terms of schemata that are hierarchically structured according to subgoal attainment relationships. Rumelhart has demonstrated that the model predicts how subjects summarize and recall brief stories. This is compatible with the idea that subjects comprehend stories partly in terms of "reasons why" characters did things and said things. In a developmental setting, Goldman (1982) created a taxonomy of knowledge analyzed in terms of components of goal-directed behavior; he claims that it can be used successfully in categorizing statements in stories made up by children and that it is sensitive to developmental change in story content in a way that is compatible with theoretical accounts of category development. Omanson, Warren, and Trabasso (1978) found that including a protagonist's motives improves the quality and quantity of inferences children draw from stories. Thus, some forms of language
production as well as some aspects of language comprehension are amenable to a goal-based analysis.

It seems reasonable to conclude from the research reviewed that many, if not most, conversations will be amenable to a subgoal analysis.

Subgoal Structure and Knowledge of It

In this section, we want to provide support for two claims: first, that the purpose of speaking is to effect an action in the addressee; and second, that the action can be effected by adhering to mutual expectations about how one usually goes about it. These claims are considered together because relevant research and argument co-occur. Since no psychological research exists in this area, the evidence presented derives from linguistics, ethnomethodology, and artificial intelligence.

Ethnomethodologists, and the linguists associated with them (e.g., Merritt), advocate applying categories of analysis to conversational talk that conversational participants themselves make use of in interpreting what speakers say. As in speech act theory, the categories refer to goal-oriented action. However, while speech act theorists label sentences as instances of asserting, or
requesting, or promising, and the like, ethnomethodologists refer to questions, summons, offers, etc. One significant difference between speech act theory and conversation analysis, which is what ethnomethodologists call their research, is that ethnomethodologists take more than one speaking turn as unitary in the achievement of an action. (A turn is all the speaking from a specific individual that is bounded before and after by the other individual's speaking.) Speech act theory assigns completed actions at the level of a single speaker utterance (a sentence-like entity). The interactional nature of talking is emphasized by ethnomethodology and this has generated controversy about whether speech act theory can account for speaking actions that ethnomethodology insists are jointly generated (Clark, 1985; Levinson, 1983).

A number of arguments in favor of the ethnomethodologists' approach have been proposed. Streeck (1980, p.140) claims that "...Searle's principles...do not present empirical statements about communicative reality but metatheoretical assumptions relating to the nature of the relationship between meaning, saying, and doing." (See also Edmondson, 1981.) According to this view, the non-applicability of speech act theory to real data, such as sentences occurring in conversations, is a consequence of the failure to realize that speech acts are often
distributed over several speaking turns in a conversation. Merritt (1976, p.355) puts it this way: "It seems to me unreasonable to conceive of pragmatic interpretation ordinarily being made on sentences in isolation. Sentences are not thrust down upon one at a time naked upon a myriad of possible contexts...." It has even been claimed that sentence topics are indeterminate if sentences in conversations are considered in isolation (Schank, 1977).

A strong claim made by ethnomethodologists (cf. Sacks, Schegleff and Jefferson, 1974 and Scheglof f and Sacks, 1973) is that, initially, conversations are indeterminate with respect to what gets done; the actualization of the evolving possibilities presented at any point within a conversation is open for negotiation by the participants. Schegloff and Sacks (1973) provide a clear illustration of this in a discussion of how telephone conversations are terminated. These researchers have observed that certain expressions like "o.k." and "we-ell" or "so-oo" initiate a conversational closing. They invite addressees to participate in closure (which they can do by replying "o.k."), but they do not demand that addressees do so. Addressees, when they next become speakers, can opt for the conversation to continue by bringing up another topic for talk. (The "demand ticket", described by Nofsinger (1975), operates in the same fashion.) If someone says "Bob?" in an
attempt to initiate a conversation, Bob has the option of agreeing to participate by saying "yes?", but he also has the option of not participating, in which case he might say "Don't bother me. I'm busy." All of this is captured nicely by Streek (1980, p.149): "...The addressee's response establishes retrospectively the prior utterance's illocutionary force as an agreed-upon 'fact.'" (italics his). When someone speaks with an intended purpose, the accomplishment of the goal is ultimately determined by the interpretation and actions of the addressee. What happens in a conversation is jointly created by the participants by a process of reaching agreements. What one participant intends to do cannot be accomplished without the acquiescence of the other, so there can be lack of agreement between what is intended and what is finally done. Under a Searlean analysis, utterances that were single speaker actions, are no longer (Edmondson, 1981). "Betting," for instance, can't be done by the bettor alone; it requires the agreement of the person to whom the bet is directed.

While the present work is sympathetic to the ethnomethodologists' views, it may be difficult to maintain that linguistic goal accomplishment is always a joint achievement. For instance, it seems possible to assert something without another person registering the assertion,
believing it, or even hearing it. On the other hand, it could be objected that the idea of assertion necessarily includes the involvement of another person. However, at least some of the time, goal achievement must be jointly performed, and the acquiescence of the other person is a necessary part of that performance. Conversations with specific overall goals qualify under this analysis. For instance, conversations for making reservations, placing orders, obtaining information, making dates, and getting appointments require both parties' co-operative participation over a set of speaking turns if the conversational goal is to be pursued to completion. Accordingly, for the purposes of this dissertation, we shall agree with the ethnomethodologists' view that goal achievement is jointly performed.

Having argued that (some) conversational goal achievement is jointly attained, we might inquire as to the types of joint co-operative activity that appear in conversations. According to the ethnomethodologists, the most ubiquitous two-turn joint co-operative creations are "adjacency pairs." Further, it is argued that adjacency pairs account for why a conversational contribution is often interpreted in terms of its relationship to what occurred ahead of it from the other speaker (Schegloff, 1968). The following examples of adjacency pairs (Clark,
1985) will help to clarify these claims:

1. question and answer adjacency pair

A. What time is it?
B. It’s three o’clock.

2. request and promise adjacency pair

A. Please pass the salt.
B. Okay. Just a minute.

3. offer and acceptance adjacency pair

A. Would you like a cup of tea?
B. Yes, please.

The replies of speaker B in the last two examples are semantically and illocutionarily indeterminate except in relation to A’s previous utterance. Had they occurred as second parts of different adjacency pairs their interpretation would have been different. For instance:
A. Can I go out and play now?
B. Yes, please.

Or imagine B's reply in the first example as a part of the non-acceptance of a request:

A. Let's go home now.
B. It's three o'clock.

There are sequential restraints between what A does and says, and what B does and says when they co-ordinate their talking. When A does something A expects the second part of the adjacency pair to be forthcoming from B, and A interprets what B does say in terms of this expectation. (Such an analysis is compatible with the operation of Grice's co-operative principle under the Maxim of Relevance.) Even silence takes on meaning on this view as in this example from Levinson (1983):

A. I'm getting fat.
B. SILENCE (equivalent to agreement)

But what role do adjacency pairs play in the determination of utterance interpretation? Clark (1985) claims that interpretation is molded not only by the local context of adjacency pairs but also by the relation of
utterances to the overall goal of the conversation. For example, an utterance said in the context of telling a joke will be interpreted differently in the context of an argument. This seems to be a plausible idea, but possibly not for the reason that Clark provides. Clark claims that most conversations are simply not so routine as to provide enough local interpretive restraints like the ones supplied by adjacency pairs. However, Merritt’s (1976) data reviewed below suggest that single-purposed, narrowly circumscribed overall conversational goals are played out according to a small set of systematic subgoal plans.

The complex relationship that can exist between requests and question-answers has been documented by Merritt (1976). Not all requests for goods and services are just two speaker turns long. Often they involve sequences of questions, wherein the seeking and granting of information forms a sub-accomplishment in the service of the request as a whole. It is interesting to note that in the service encounters (short conversations between customers making requests and clerks complying with those requests) that Merritt examined, only a small number of question-answer patterns are utilized. Merritt speculates that these patterns are correlated with the pragmatic interpretation that utterances participating within them receive. The suggestion arises, then, that there is more
than one level of sequential restraint on what gets done at specific points in certain conversations; in particular, the adjacency pair defined over two turns and patterns longer than two turns. The potential patterning across more than two turns is a major topic of interest in this dissertation, and it is defined here as subgoal structure.

One additional consideration motivates the search for subgoal structure. If at least some of the time conversations have specific overall goals, then they are examples of co-operative goal achievement taking place over more than one speaking turn. If an accomplishment involves contributions from more than one source, one way of avoiding the co-ordination problem (Lewis, 1969; Sperber and Wilson, 1986) of where precisely to place one’s contributions is to fall back on a regular subgoal plan. This suggests not only that conversations might have subgoal structure, but that conversationalists might know about that structure.

The above claim has been advanced in an artificial intelligence model of conversational comprehension by Levin & Moore (1976, 1977). On the basis of the effectiveness of the model to simulate conversation, Levin and Moore conclude that: (a) in order to participate in and comprehend conversations one must utilize knowledge of a
finite set of recurrent conversational subgoal patterns that have identifiable regularities; (b) conversational participants have complementary subgoals; (c) subgoals must be recovered during conversations by comprehenders and acted upon by speakers; (d) conversational knowledge structures have a representation independent of other sorts of knowledge.

Similar conclusions have been reached in the modelling attempts of Allen and Perrault (1978, 1980) and Cohen and Perrault (1979). According to these researchers, once the addressee has recovered the subgoals of the speaker, constraints are placed on what the speaker can say next, which amounts to a reduction of uncertainty in the comprehension process. For the same reason, utterances can be brief and minimal in explicit content. One difference between these models is the status of the knowledge structures contained in them. Levin and Moore are in favor of a representation that makes such knowledge structures specific to their use in dialogue, whereas Allen, Cohen, and Perrault include the plans addressees attribute to speakers within a broader class of "reasons why people engage in actions" (where one type of action is speaking). The second alternative is more compatible with the idea that conversational subgoal structure is a consequence of its relation to human social activity.
Subgoal Structure and Social Activities

Another principle claimed by researchers concerned with pragmatic aspects of language is that the social activities that conversations are embedded within constrain functional, and possibly semantic, interpretations of utterances (Levinson, 1979). Levinson (1983) provides some examples. Here is an exchange between a teacher and a pupil in a classroom:

Teacher: What are you laughing at?
Pupil: Nothing.

Clearly, the teacher’s utterance is a command to stop laughing, and the pupil’s utterance is an acceptance of that command. Note, however, that the opening question could have functioned quite differently in, for example, a situation in which a group of friends had gotten together to watch a television program.

As a second example, consider the following utterance which occurs at the end of a job interview:

Interviewer: Would you like to tell us, Mr. Khan, why you have applied to Middleton College in particular?
In this context, the utterance functions to solicit compliments. Its intended effect would be very different if it were to be directed to an instructor by a student.

Note that the relation between conversational attributes and social activities is not likely to be unidirectional. Social activities are likely to influence the interpretation of speaking in conversations that are part of those activities, but conversations probably also adapt to and reflect some of the properties of the social interactions they serve. This idea has usefully directed conversation analysts (cf. Sacks, Schegloff, and Jefferson, 1974) in developing a general description of the turn-taking system that characterizes conversations. Turn-taking rules contribute to a solution of the co-ordination problem. The same general approach has been exploited by Brown and Levinson (1978) to explain politeness phenomena across several languages. Brown and Levinson conclude that "...in general the abundance of syntactic and lexical apparatus in a grammar seem undermotivated by either systemic or cognitive distinctions and psychological processing factors. The other motivation is grossly social...." (p. 99).
AN OVERVIEW OF THE RESEARCH

The research reported in this dissertation is directed toward providing empirical justification for some of the main ideas underlying the literature just reviewed. The methodology, although inductive, is purposefully eclectic for the reason that it attempts to satisfy both criteria for external validity and the requirements imposed by the diverse disciplines to which the ideas are indebted. The following claims are assessed:

**Syntax for subgoals:** The talking that occurs in routine conversations with a single overall purpose can be described objectively in terms of what speakers intended to do by saying what they said—that is, their subgoals. Since whatever is routinely carried out by two people trying to co-ordinate their actions is likely to evolve into something that is orderly (Lewis, 1969), it is expected that once conversational talking is assigned a subgoal description, the conversations themselves will reveal regularities at that level of description. In other words, we can anticipate being able to describe a syntax for subgoals.

**Knowledge of subgoal syntax:** Conversations are products of the minds that give them an external
realization in speech. For that reason, properties of conversations ought to be reflected in properties of mind. Therefore, it ought to be possible to demonstrate that conversationalists know about the subgoal regularities that are describable for the conversations themselves. This knowledge could ultimately figure in mutual expectations about how to do something conversationally.

**Social bases of subgoal syntax:** Because a pragmatic orientation emphasizes the social nature of linguistic activity, it ought to be possible to show that subgoal regularities are partly the consequences of the social situation. Accordingly, systematic changes in subgoal patterns should occur when the social situation changes.

It has been argued that conversations are highly likely to provide the best data for trying to elucidate the phenomenon of language comprehension within a pragmatic framework, but even this restriction on what should be the subject matter of a research commitment is too broad. What sorts of conversations and between whom? Chit-chat between intimates or formal interaction between strangers? In an attempt to choose those conversations which would be most amenable to the theoretical and empirical orientations underlying this dissertation, the following additional qualifications should apply to the conversations studied:
(a) Conversations must, at least initially, be
two-party and as natural and spontaneous as is feasible.

(b) No visual or other extra-auditory information may
be present.

(c) The purpose of each conversation must be the same
and it must be an obvious purpose; because of its purpose
the conversation must be seen to be related to other sorts
of conversations with the same and different purposes.

(d) The conversations must be between strangers.

(e) They must have clearly definable beginnings and
endings.

(f) They must be of no inherent interest to the
participants, and relatively spontaneous. An example of
what one does not want to look at would be a conversation
long-agonized over in advance and over-rehearsed.

(g) Conversational participants should be interested
in efficiency rather than, for example, filling in the
time. As well, they should be likely to hold this variety
of conversation repeatedly since it should be something
everyone commonly does.

Attributes (c), (f), and (g) insure as best we can that the conversation has a maximum of that which is under scrutiny—recognizable subgoal patterns. This follows because they are routine in the sense of (c), (f), and (g). As well, (a) and (b) insure that the data collected will be characterized as relatively simple, and this can be expected to limit variability. That the conversations are somewhat spontaneous allows generalizations to be made about what people in fact do when they hold conversations, and not what they might conceivably do. Requirement (d) also limits variability because it insists that conversations adhere to public and conventional (rather than private and idiosyncratic) techniques for subgoal attainment. Attribute (e) permits any analysis to be based on clearly identifiable units.

Since telephone conversations in which callers make appointments for the services of a hairdresser fulfill the above requirements, they provide the core data for this research. From an ethical point of view, it is important that conversations for making these appointments can be collected and the appointment can easily be broken later with another telephone call. They also involve no confidential information, and anonymity is easy to
preserve. From a practical point of view, there are many hairdresser listings in the telephone book.

The research reported in what follows is divided into six studies. Overall, the goals of the studies were to provide the following evidence:

**Study IA** was an attempt to show that mundane, two-party conversations (those for getting a hairdresser appointment) could be assigned subgoal structures.

**Study IB** attempted to objectify the subgoal structures supplied to conversations in Study IA by providing stringent inter-rater reliability tests based on the data of Study IA.

**Study IIA** attempted to demonstrate that conversationalists possess knowledge about the subgoal structures of the conversations collected in Study IA. The methodology utilized a standardly accepted task, that of resequencing scrambled conversations.

**Study IIB** employed a different means of assessing conversationalist knowledge—one suggested by the results of Study IIA.
Study IIIA was an attempt to extend the results of Study IA (in which conversations were researcher-generated and between strangers) to spontaneous conversations between acquaintances.

Study IIIIB was an attempt to demonstrate the objectivity of the structural assignments made to the Study IIIA data. Inter-rater reliability tests were obtained.
The aim of this study was to discover whether subgoal structure exists within two party conversations held for a specific single purpose. Subgoal structure would be present if:

(1) all the speaking within the conversations were exhaustively sortable into subgoal achievements and

(2) the number of observed sequential subgoal patterns was significantly smaller than the set of all possible patterns. The rationale for these statements will become apparent below.
METHOD

A. Generating the Conversations

One twenty-year-old female college student was trained to serve as a caller to beauty salons in order to make an appointment for a haircut. She remained uninformed as to the nature of the research. She was paid for her participation which was divided into training and data collection sessions.

The goals of the training sessions were: (1) to make certain that the callee ('A' in the transcripts) and not the caller ('B' in the transcripts) led the conversation; (2) to accustom the caller to the procedure so that it felt natural and spontaneous; (3) to eliminate practice effects. None of the 24 training calls were used for data analysis, and no salon contacted during training was contacted during data collection. All salons contacted, both for training and for data collection, were selected non-systematically from the Yellow Pages of the telephone book.

At the beginning of training, the caller was asked to use the following opening: "Yes. I'm phoning to make an appointment." Nineteen of the 24 training calls started
this way. This turned out to be an unnatural opening because it led to what seemed like long awkward silences on the part of the callee (A). As well, B had a tendency to use a questioning intonation with this form of opening. The indirect speech act, "Yes. I'd like to make an appointment," was then tried. It seemed to produce a smoother opening and it did not "lead" by specifying any appointment parameters, nor did the caller have any difficulty in suppressing a questioning intonation. This opening was used in the remaining five training calls and it became the standard\(^1\).

The following instructions were given to the caller, for both practice runs and for data-generating calls:

I'm interested in the way that people hold everyday, ordinary telephone conversations. For this reason I'm going to ask you to get an appointment at a beauty salon. If asked, make it for a shampoo, cut, and blow-dry. Make the appointment as you ordinarily would and so that it really fits your schedule and you could keep it if you had to. Apart from the first thing that you say, in which I will ask you to say something very specific, just hold the conversation as you normally would. I will be tape recording the whole conversation. Here's what I want you to say first. (This was presented to her on a card.) That is, after the other party answers the phone and says "Hello. So-and-so's Beauty Salon", I want you to say exactly what's on the card and then wait for the other side to reply. You are free then to hold the conversation in any way that seems appropriate except that I want you to let the other side lead. That is, don't offer more information than you are
asked for, don’t ask for more information than you really need, don’t bring up topics, and try not to fill silences. Do you have any questions?

The caller was shown transcribed examples of leading and non-leading conversations prior to training calls. She was given a list of salons with their phone numbers and a table to fill in her impressions about the native speaker status of the callee, the appointment time, and the tape start number. She was instructed to eliminate any salons she had previously visited. The researcher left the room while the caller made the phone calls. She made about twenty calls in any one session. Eventually she terminated calls when she felt certain that the callee was a non-native speaker by saying something like "Excuse me, but someone’s come to the door. I’ll have to phone you back later." She cancelled all appointments later the same day.

B. Screening Conversations and Making Transcriptions

Some conversations were discarded and not transcribed for any one of four reasons². These attributes made a conversation a discard:

1. The callee was a non-native speaker of North American English. This was a criterion because there may be cultural differences in the way in which these conversations are held. British, Australian, New Zealand,
etc., speakers of English counted as non-natives. If the caller was certain that the callee was a non-native speaker, the conversation was eliminated. If she was uncertain, or if the researcher thought a callee might be a non-native speaker, an independent third party was asked to listen to the tape and make a judgment.

2. The caller was judged to have led at some point in the conversation. This criterion derives from the fact that we are interested in callee-imposed structure rather than caller-imposed structure. Whenever the researcher thought the caller might have led, a judgment was obtained from a third independent party.

3. The appointment was not completed. That is, as judged by a third party, either name, time, or day, or some combination of them was not decided on; essentially, these attributes defined an appointment for this study.

4. The conversation was judged to have been interrupted or the caller was put "on hold" once the business of obtaining an appointment had begun. This restriction was imposed because there is no way of knowing what memory limitations do to conversational structure. These were third party decisions, again, for conversations that the researcher thought were doubtful.
All the useable conversations were transcribed following the guidelines in J. Schenkein (1978), except that all punctuation and pauses were left out as their determination appeared to be highly subjective. After conversations were screened for discards, there were 93 useable conversations and 27 discards. Among the discards, 11 were due to a non-native speaker callee, eight were due to a leading caller, three were incomplete appointments, four had interruptions, and one was impossible to transcribe because of poor signal quality.

C. Structural Categories in the Conversations

The aim of the research reported here is to demonstrate objectively that subgoal structure exists in each of the useable conversations. This section provides the initial steps in the analysis of conversational subgoal structure. The results will be corroborated in Study IB in the form of inter-rater reliability measures based on assigned structural categories (see below).

In the present study, each transcript was reviewed speaker turn by speaker turn by the researcher only. Except for the introductory identifying opening and closing turns, a label for what was "happening" in each speaking turn was
assigned. A description of the categories that were used is provided below. An initial unsystematic random check of transcribed conversations by an independent observer yielded 100% agreement on category assignment.

There are approximately seven extant coding schemes in the literature (Dore, 1979; Schegloff and Sacks, 1973, D'Andrade and Wish, 1985), none of which was considered entirely suitable for the analysis of the present conversations. The coding scheme finally adopted was developed using researcher intuition applied to a set of researcher-generated conversations for getting appointments that served as pilot data. The following criteria served as guidelines in the development of the categories:

1. The schema should be easy to apply by ordinary native speakers.

2. The categories should be the ones that native speakers would use when thinking about or describing the uses to which language can be put.

3. Each category should serve as an answer to the question, "what is the speaker doing or trying to do by saying this?"

4. The categories should be practically based (derivative of intuitive judgements about real conversations) rather than theoretically based (derivative
of rational judgements about idealized conversations).

5. All speaking within the conversations should be exhaustively and exclusively captured by as few categories as possible.

6. The schema should be at least partially applicable to conversations different from, but related to, the conversations under consideration here (such as conversations for other types of appointments, or for reservations).

7. The categories should not intend to capture interpersonal content such as emotion, co-operativeness, status, politeness, intimacy, etc.

8. The categories should capture the practical content of the overall goal of the conversation; for instance, since appointments involve assigning a time to an individual, the categories should include specific references to time and individual.

9. Category assignments should not be based on particular parts of speech or syntactic forms used by speakers.

10. Categories should not be defined so as to restrict the number of speaker turns over which subgoal patterns may occur.

A brief consideration of schemas currently being applied in analyses of language usage will demonstrate that,
although there is no existing schema available that meets all nine criteria, most of the criteria are related to characteristics of existing schemas. Each criterion is discussed in terms of its motivation and its relation to the existing literature.

The first (i.e., easy application of the categories by ordinary native speakers and the second (i.e., natural categories of language users) are borrowed from the ethnomethodologists. Since there is reason to believe that addressees attribute reasons to speakers, it is natural to view language as goal-directed action. It should be noted that most theoretically based, and even most practically based (see below) schemas, are quite difficult to apply to naturally occurring conversations (such as those comprising the pilot data).

The third criterion (i.e., categories are categories of action) derives from the core assumption of all pragmatic analyses, independent of the particular schema they use.

The fourth criterion (i.e., practical rather than theoretically based categories) was an attempt to avoid what some theorists see as a limitation of, for instance, speech act theory. As was discussed in Chapter I, there is the possibility that a schema developed entirely upon (and
meant to apply to) plausible, rather than actually occurring data, will become an analysis of linguistic concepts rather than of language itself. Speech act theory as proposed by Austin (1975), Searle (1975a), and Vendler (reported in D'Andrade and Wish, 1985) is theoretical rather than practical. Dore's (1979) schema, as well as Labov and Fanshel's (1977), D'Andrade and Wish's (1985), and the ethnomethodologists' (Schegloff and Sacks, 1973) are practical ones.

If the discoverable subgoal structure of whole conversations is of interest, then the fifth criterion (i.e., parsimony in numbers of categories) necessarily applies. The sixth criterion (generalizability) is included in order to confer some practical and theoretical generalizability to the schema. Although neither the fifth nor the sixth criterion has received attention in the literature on such schemas, such considerations are implicit in the work in artificial intelligence (as reviewed in Chapter I).

The seventh criterion (i.e., categories are based on transactional rather than phatic aspects of communication) is included in the interests of simplicity. It is easy to make a case, as Labov and Fanshel (1977) do, for utterances doing more than one thing at a time. An example would be
assuming but also complimenting, or questioning but also expressing anger. It is reasonable, at least before any subgoal patterns have been isolated, to restrict a search for them to one level. Only Labov and Fanshel remark upon the possibility of multi-level hierarchical action structure within conversations; other theorists freely mix category labels with and without interpersonal content.

The eighth criterion (i.e., categories based on practical content of overall goal) allows an analysis of subgoal structure to be related to the social activity of which an appointment-making conversation is an integral part. The activity is social because it involves two people reaching an agreement (often a negotiated one). The pilot data suggested that the agreement presents an organizational problem—one of committing (and accepting, from the client’s point of view) the delivery of services of variable duration to specific start times. The way the conversation fits into the organizational task will become apparent only if components of the task are made explicit in the schema.

Regarding the ninth criterion (i.e., categories based on actions performed rather than surface structure of utterances), often there is no direct relation between sentence type or verb and intended action. This makes it
unlikely that any schema directly related to Austin's or Searle's speech act theory will be applicable to generated or spontaneous conversations. Even if there were a relation of the requisite sort, it is unlikely that these analyses would work because it is sometimes the case that conversational subgoals are pursued during appointment-making by employing sentence fragments that may not include a verb.

The last criterion (i.e., no restriction on the number of turns over which a category is defined) is included because there are good reasons to believe that speaking goals are sometimes pursued at a level beyond the sentence (or utterance), beyond the turn, and beyond the adjacency pair (see discussion in Chapter I). No extant schema considers this possibility, although it is a clear extension of conversational analysis as carried out by Merritt (1976), and it was suggested by the pilot data as well.

Each category listed below when applied to the transcripts was more specifically designated as "opening," "ongoing," or "closing," so that, for instance, the category "time" is really three separate categories: "time opening," "time-ongoing," "time close." A category opens at the turn where the activity designated was judged to have
begun; it is on-going in every turn between its opening and its closing, just in case the closing does not take place in the turn occurring immediately after the opening turn. A category closes at the turn where the activity designated was judged to have been completed.
Sixteen Structural Categories

T  1. Time: either party is engaging in activities directed toward establishing a mutually agreed upon time for the appointment.

O  2. Operator Determination: either party is engaged in activities directed toward establishing a mutual understanding about the caller’s preference for an operator (stylist).

S  3. Services: either party is engaged in activities directed toward establishing a mutual understanding about what the caller wants to have done during the appointment.

N  4. Name: either party is engaged in activities directed toward establishing a mutual understanding about the identity of the caller.

O assig.  5. Operator assignment: either party is engaged in activities directed toward establishing a mutual understanding about the operator the caller will have for her appointment. This covers both situations where offers are made and accepted and where no offers are made.
6. **Time confirm**: either party is engaged in activities directed toward establishing a mutual understanding about the mutually agreed upon time for the appointment. This category can be used only after the "Time" category has been applied to a turn or turns. The purpose of confirming time can be anything.

7. **Operator confirm**: this is analogous to the "Time confirm", but concerns the operator.

8. **Services confirm**: again, this is analogous to "Time confirm".

9. **Referral**: either party is engaged in activities directed toward establishing a mutual understanding about why the caller decided to attempt to get an appointment with this specific salon. The activity is directed toward answering the implicit "why us"? It is a co-operative effort at creating a justification for the telephone call and its purpose.

10. **Previous visits**: either party is engaged in activities directed toward establishing a mutual understanding about whether or not the caller has been to the salon before.
State 11. State of hair: either party is engaged in activities directed toward establishing a mutual understanding about the current condition of the caller's hair.

Tel 12. Telephone: either party is engaged in activities directed toward establishing a mutual understanding about the caller's telephone number.

Loc 13. Location: either party is engaged in activities directed toward establishing a mutual understanding about where the salon is located.

Pr 14. Price: either party is engaged in activities directed toward establishing a mutual understanding about the cost of the services the caller desires.

S supp. 15. Service supports: either party is engaged in activities directed toward establishing a mutual understanding about what props (usually pictures) are useful in providing services to the caller.

D. Illustrations of Structural Categories in Conversations

The two following conversations are examples of transcripts that have been analyzed for these sixteen categories. Person and place names have been changed to maintain anonymity. Refer to section 'E' following the transcripts for an explanation of the symbols on the left.

A. Good Morning Al’s Coiffures
B. Yes I’d like to make an appointment

T^0
A. Ah For what day
B. Saturday morning please

T^C S^0
A. Ah What time would you like that
B. About ten

S^C N^0
A. Okay What’s that for
B. Cut shampoo and a blow dry please

N^C (residual)
A. Okay And your name please
B. Mcrae M-C-R-A-E
A. M-C
B. R-A-E

A. Okay We’ll see you then
B. Thank you
A. Bye bye
B. Bye
Good Morning New Wave  
Yes I'd like to make an appointment  
Okay Who'd you like it with  
I've never been there before  
When did you want to come in  
Friday morning  
And what were you wanting to have done  
Shampoo cut and a blow dry  
Okay what time on Friday  
Eleven o'clock  
Okay And your name  
Susan McRae  
And your phone number  
324 one thousand  
Okay Susan  
Okay  
Eleven o'clock on Friday  
Thanks  
Bye bye  
Bye

### E. Assumptions Underlying Structural Analysis

The major, but by no means the only, categories of interest are the first four: Time, Operator determination ("Operator" for short), Services, and Name, because they occurred the most often compared to the others and they occurred early in the conversations. That is, T,S,O, and N are basic categories compared to the other twelve. Actually, only 16.1% of all the conversations did not have any non-basic elements, and a Chi Square test for basic and non-basic frequency equality forced the conclusion that there is a preference for non-basic elements to occur ($X^2[1,N=93]=41.34, p<.01$). On the other hand, there was also a preference for non-basic elements to be non-intrusive in
the sense that they tended to occur after the basic
elements occurred \(X^2[1,N=93]=31.4, p<.01\) in a test for
equal frequency of conversations with intrusions and
conversations without intrusions). As well, the preference
for non-basic elements was due mostly to the preference for
Time Confirm \(X^2[1,N=93]=6.76, p<.05\) in a test for equal
frequencies of conversations with and without Time
Confirm). There was no preference for the second most
popular non-basic element, which was Service Confirm
\(X^2[1,N=93]=17.4, p<.01\) in favor non-occurrence) in a test
for equal frequencies of conversations with and without
Service Confirm). Yet, there was a strong preference for
both S \(X^2[1,N=93]=62.1, p<.05\) and O
\(X^2[1,N=93]=30.2, p<.01\) to occur in conversations beyond
the obligatory and defining N and T (the test in each case
is for equal frequencies of conversations with and without
S, and with and without O).

The problem is one of deciding what the status of Time
Confirm ought to be; because of its frequency of occurrence
it behaved like a basic element, but because it never
intruded it also behaved like a non-basic element. It was
decided to treat it as non-basic for the following reason:
time confirm intruded only once in 58 conversations, and
the basic element that intruded the least on "other
business" (S,O,T) was N (18 times in 93 conversations); if
Time Confirm were like N it ought to intrude 11.2 times in 58 conversations, which is significantly larger than 1 ($X^2[1, N=58]=11.5, p<.01$). See Appendix C for the details of the statistical calculations that permit these conclusions.

An analysis of structure was done, therefore, in the following manner:

The frequency of conversation type in terms of time opening and closing, operator opening and closing, services opening and closing, and name opening and closing without regard to any other category was tabulated. Let $T^O$ stand for "time open," $T^C$ for "time close," $O^O$ for "operator open," $O^C$ for "operator close," $S^O$ for "services open," $S^C$ for "services close," $N^O$ for "name open," and $N^C$ for "name close." A conversation assigned a structure such as

$$T^O T^C \text{ Referral open Referral close } S^O S^C N^O N^C$$

would, when frequencies were tabulated, have a dummy place holder to substitute for the referral activities; it would be considered "equivalent," then, to a conversation where referral did not take place, but something like previous visits did. The final structure assigned would look like this:
When this was done, the 93 conversations sorted into 4 basic types as explained below.

At this point, deciding whether structure actually exists entailed assigning a structure to each conversation in terms of openings and closings, and then deciding whether one could reasonably expect to get the obtained frequency distribution of 93 conversations by chance alone. We needed to determine what combinations of $T_0^C, T_0^S, S_0^C, N_0^C, O_0^C, O_0^C$ are possible by chance alone, and then to look to see how 93 conversations should have distributed themselves over these possible combinations if what was obtained was truly random. The difficult part was describing the combinations so that one was certain that all possibilities had been covered. Also, it was decided that the best tactic at this point was a conservative one that decreased the possibility of obtaining significance, and this is reflected in both how the possible random combinations were arrived at, and how the Chi Squares are calculated.

To understand what conservative restrictions were placed on possible random combinations, it is important to know what broad types of conversations were obtained in the
data, as the data guided some of the restrictions, and the methodology used to collect the conversations guided some others.

The simplest sort of conversation was called "linear" and looks like $T^{O}T^{C}N^{O}N^{C}S^{O}S^{C}$, or TNS for short (when items open, then close without other items interfering inbetween, the symbol string was simplified by leaving off the superscript o and c). The first transcribed example above has a linear structure that can be described as TSN. A more complex, but frequently encountered type, was called "embedded" (a term borrowed from Merritt, 1979), and it looks like $T^{O}S^{O}S^{C}T^{C}N^{O}N^{C}$, or TOSTC for short. The second transcribed conversation above is an example of embedding, and it had the following structure assigned to it:

$$OT^{O}ST^{C}N(\text{phone})(\text{time confirm})$$

"Overlapping" also occurred, but very infrequently, and looks like this: $T^{O}N^{O}T^{C}N^{C}S$. A difference will be made below between "simple embedding" and "complex embedding," but the same principle applied to both. In addition, overlapping could occur with both sorts of embedding, at least theoretically, but it will be described later.

Ultimately, the statistical analysis was done
separately for conversations composed of two elements, those composed of three elements, and those composed of four. But for now, here are the restrictions that applied in the generation of possible random combinations, regardless of the numbers of elements that went into the generation:

1. A "close" cannot come before an "open". This must be so by definition.

2. The only "happening" that can take embedding is Time. This is a generalization from the data, but it is partly attributable to the constraints imposed by the confederate caller. That is, T is the only thing the caller did not fully specify when asked. For instance, she might say "Saturday morning, please" in a single turn, but she never said something like "Saturday morning at ten o'clock, please". This meant that some other happening might be pursued by A in the next turn; thus, embedding had begun. Saying "I've never been there before" when asked what operator she wanted (and this is what she invariably said) fairly effectively closes Operator, though it is conceivable that the callee could try to keep it open ("Well, would you like Molly or Sue then?"); in fact, this actually happened once but the conversation was not one in which Operator concluding involved completing anything else
first. Likewise, S was terminated by the caller with not much opportunity for the callee to leave it open even if she/he had wanted to. Actually, services are negotiable even with the restriction the caller placed on them and this became apparent once in a conversation that was discarded for independent reasons--the callee said she could not do a blow dry and offered a set instead. Finally, there does not seem to be anything that Name could be contingent on.

3. There is a maximum of one level of embedding. This, with one exception, characterized the data, and it follows from restriction (2). (The one exception was originally miscategorized structurally. The error has been left in because to allow two levels of embedding at this point would make the number of allowable random combinations explode.)

4. A maximum of only two "happenings" can open up in one turn at speaking. This followed purely from the data. That is, one observed "When do you want to come in and what do you want done?", but never "When do you want to come in, what do you want done, and who do you want to do it?"

5. A maximum of two things can be held open simultaneously. Again, this was dictated by the data.
RESULTS

A. Obtained Sequences and Possible Sequences

The above set of restrictions allowed the computation of a conservative number of combinations under the null hypothesis. Table 1 presents the obtained sequences for two-, three-, and four-, element conversations compared with the number of possible sequences. (See Appendix D for details of the calculation of possible sequences.)
<table>
<thead>
<tr>
<th></th>
<th>POSSIBLE</th>
<th>OBTAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. linear orders</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TN</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NT</td>
<td></td>
</tr>
<tr>
<td>b. simple embedding</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>T^0N^c</td>
<td></td>
</tr>
<tr>
<td>c. overlap</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>T^0N^0T^cN^c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N^0T^0N^cT^c</td>
<td></td>
</tr>
<tr>
<td>TOTAL POSSIBLE</td>
<td></td>
<td>5</td>
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</table>
TABLE 1 continued

Sequences for three elements (TSN)

<table>
<thead>
<tr>
<th>POSSIBLE</th>
<th>OBTAINED</th>
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</thead>
<tbody>
<tr>
<td>a. linear orders</td>
<td>13</td>
</tr>
<tr>
<td>TSN</td>
<td></td>
</tr>
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<td>NTS</td>
<td></td>
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<tr>
<td>STN</td>
<td></td>
</tr>
<tr>
<td>TNS</td>
<td></td>
</tr>
<tr>
<td>NST</td>
<td></td>
</tr>
<tr>
<td>SNT</td>
<td></td>
</tr>
<tr>
<td>b. simple embedding</td>
<td>0</td>
</tr>
<tr>
<td>T^o SNT^c</td>
<td></td>
</tr>
<tr>
<td>T^oNST^c</td>
<td></td>
</tr>
<tr>
<td>c. complex embedding</td>
<td>9</td>
</tr>
<tr>
<td>T^o ST^c N</td>
<td></td>
</tr>
<tr>
<td>T^oNT^c S</td>
<td></td>
</tr>
<tr>
<td>ST^c NT^c</td>
<td></td>
</tr>
<tr>
<td>d. overlap</td>
<td>0</td>
</tr>
<tr>
<td>T^oN^oT^c N^oC^s</td>
<td></td>
</tr>
<tr>
<td>TN^oS^oN^oC^s</td>
<td></td>
</tr>
<tr>
<td>e. overlap with embedding</td>
<td>1</td>
</tr>
<tr>
<td>T^oNS^oT^c^c S^oST^c</td>
<td></td>
</tr>
<tr>
<td>S^oT^oSC^c NT^c</td>
<td></td>
</tr>
<tr>
<td>N^oT^oNC^c ST^c</td>
<td></td>
</tr>
<tr>
<td>TOTAL POSSIBLE=34</td>
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</table>

Sequences for three elements (TON)

<table>
<thead>
<tr>
<th>POSSIBLE</th>
<th>OBTAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. linear orders</td>
<td>2</td>
</tr>
<tr>
<td>b. simple embedding</td>
<td>0</td>
</tr>
<tr>
<td>c. complex embedding</td>
<td>2</td>
</tr>
<tr>
<td>d. overlap</td>
<td>0</td>
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<tr>
<td>e. overlap with embedding</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL POSSIBLE=34</td>
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Table 1 continued

<table>
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<th>Sequences for 4 elements</th>
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</thead>
<tbody>
<tr>
<td><strong>POSSIBLE</strong></td>
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<tr>
<td>a. linear orders</td>
</tr>
<tr>
<td>b. simple embedding</td>
</tr>
<tr>
<td>T⁰SNOT⁰C</td>
</tr>
<tr>
<td>T⁰SONT⁰C</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>c. complex embedding</td>
</tr>
<tr>
<td>T⁰SNT⁰C⁰</td>
</tr>
<tr>
<td>T⁰NST⁰C⁰</td>
</tr>
<tr>
<td>T⁰OT⁰CNS</td>
</tr>
<tr>
<td>T⁰OT⁰CSN</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>d. overlap</td>
</tr>
<tr>
<td>N⁰T⁰NCT⁰COS</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>e. overlap with simple embedding</td>
</tr>
<tr>
<td>T⁰SNO⁰T⁰COC</td>
</tr>
<tr>
<td>OT⁰SN⁰T⁰CN⁰C</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>f. overlap with complex embedding</td>
</tr>
<tr>
<td>T⁰ON⁰T⁰CN⁰CS</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>.</td>
</tr>
<tr>
<td>TOTAL POSSIBLE = 294</td>
</tr>
</tbody>
</table>
B. Conversational Structure

$X^2$ tests of significance performed using a randomization method revealed that four-element conversations and three-element TSN conversations distributed themselves across combination types differently from what one would expect by chance. Two-element conversations and TON conversations did not. (See Appendix D for details of the statistical analysis.) Thus, there was strong evidence for structure in three- and four-element conversations, but no firm evidence for structure in two element conversations.

C. Conversational Preference

Generalizations about conversational structural preference can be drawn from the basic data. See Appendix E for details of the statistical analysis.

1. There was a preference for four element conversations (67% of the total; $X^2[2,N=93]=54.5$, $p<.005$) and an avoidance of two element conversations (3% of the total).

2. There was a preference for non-linear conversations (62% of the total; $X^2[1,N=93]=5.2$, $p<.05$). Among the
non-linear conversations, there was a preference for complex embedding (87.9% of all the non-linear conversations; $X^2[1,N=69]=42.2, p<.005$). In fact, simple embedding, overlap, and overlap with simple embedding did not occur at all.

3. There was a preference for conversations to start with T, and there was an avoidance of an N start (50% of all three and four element conversations start with T; $X^2[3,N=93]=47.4, p<.005$).

4. For three-element conversations, 83% include S, and the preferred third element was S rather than O ($X^2[1,N=28]=10.5, p<.005$).

**DISCUSSION**

The above analysis suggests that not just anything happens in these sorts of conversations and what does happen is predictive of what just happened before and what is about to happen next. In other words, these conversations are structured: not just any randomly selected happening from the set of 16 can precede or succeed any other.
Several issues are raised by the conversational preference data. Consider first the tendency for conversations to include four basic elements and to avoid a simple parsimonious pair (T,N). The decision was made early to define an appointment as necessarily including a completed N and a completed T. In fact, the data itself demand the same restriction: only two conversations were discarded because of a missing N or T. Even then, one discard included T but it failed to be completed. But if virtually every conversation indicates that the essence of achieving an appointment for the services of a hairdresser involves the assignment of a time to a person, it seems that characteristically more is done (S and O). The reason why more usually gets done is best considered in light of the preference for complex embedding within the non-linear category.

S and O embedded within T, but N hardly ever did (four times in 58 conversations including the partial embedding that results from cases of overlap, or 6.8%). Neither S nor O nor N ever take an embedding. It is as though T is neither known by A nor completely pre-determined in B’s mind. Time needs to be worked out and the policy of a salon is usually to provide the time the customer decides upon within the constraints of what is possible. Agreement can
be facilitated by settling other time-determining parameters of an appointment: what services are desired and which operator is preferred. In the cases of S and N, it is difficult to see how their completion could be contingent on anything else getting done; they are predetermined, stable, and in no sense negotiable. It is possible to imagine S opening, then being pursued for a turn or two (for example, A could have, but didn't, ask B to select someone from a list of available male and female operators just in case B happened to be sensitive to the gender of an operator), but it is difficult to imagine what other happening could be relevant to determining O once B had said she had never visited the salon.

One reason that simple embedding, overlap with simple embedding, and overlap with three elements did not occur is that they require N to embed within T (complex embedding and overlap with complex embedding occur with an embedded N only infrequently—6.8% of the time among non-linear conversations). Such sequences would seem to violate a rule of politeness. After all, how could the agreed-upon time have anything to do with the particular caller? To make Time closing contingent in such a manner would probably result in the caller concluding that some callers are preferred to others; the realm of what is possible is not apparently constrained by the identity of the caller and so
there is no need for \( N \) to embed within \( T \) and there is a good reason for it not to.

Add to the overall picture the fact that in 84.3% of the linear conversations \( S \) or \( O \) or both were opened and closed before \( T \) was opened, and a possible interpretation of the first two observations about structural preference emerges: \( S \) and \( O \) occur principally in order to advance the completion of a defining achievement---\( T \), so that they are completed in order that Time may be completed. Their subgoal role is expressed structurally in one of two ways---they embed in \( T \) or \( T \) opens only after \( S \) and \( O \) have closed; in either case \( T \) does not close before other things have been accomplished, but those things are never accomplished in the absence of \( T \), and they are only rarely started and finished after \( T \) closes (5.7% of the time).

Two predictions can be offered on the basis of this interpretation. First, whenever linear structures are found to be the most popular they should adhere to the pattern of \( T^0 \) occurring after \( S^C \) and \( O^C \). Second, independent of particular circumstances, \( T \) and \( N \) should always occur since their values can never be known by both parties in advance of the appointment-making activities, and \( T \) and \( N \) are necessary appointment-making accomplishments. \( S \) and \( O \) should show more variability in appearance for two
reasons—they are T-facilitating accomplishments, not necessary ones, and under certain circumstances, since they can have stable, mutually known values, they may not need to be explicit for facilitation to take place. (These predictions were tested in Study IIIA.)

Turning to a consideration of the preference for a T start, the obvious explanation here is that the main order of business is settling on a mutually agreeable time. This conversational fact is reflected not only in the relation between T and all other basic and non-basic elements, but also in what A usually decides to do first.

The preference for S rather than 0 as the third element in these conversations presents an interesting interpretive challenge. So far, the appearance of S and 0 have been attributed mainly to their role in resolving T, so what is required is an account of the way in which knowing about services is more facilitative in closing Time than knowing about operator. One explanation might be that operator preference at these beauty salons was mostly irrelevant because they were (unknown to the researcher) one-operator establishments. (Study IIIA considered this explanation.)

If 0 and S facilitate T they likely do it by providing
indirect information about when an appointment can begin or when it cannot begin. That is, when B specifies an operator A then knows, on the basis of referring to the operator’s already booked time, when the operator cannot be available for A. Without knowing how long B will be requiring an operator, A at this point will not have any information about when B can come in. If A has information about the services B desires, A also then can assess how long B’s appointment will take and by referring to all the separate operators’ currently booked time, A is now in a position to know both when B cannot come in and when she can come in. This is the sense in which S confers an advantage—it produces a more efficient means of accomplishing a conversational goal, and there are probably a variety of pressures that result in the high frequency of TNS conversations observed. This may represent an adaptive adjustment of conversational content to efficient, practical goal pursuit.
STUDY I
PART B

INTEROBSERVER RELIABILITY SCORES FOR STUDY IA

INTRODUCTION

The structural assignments given to the conversations in Study IA were supplied by the researcher only. In this study inter-rater reliability measures were obtained.

METHOD

A. Observer Training and Data Collection

Thirty percent, or 28, of the original 93 transcripts were randomly selected from Study IA and then typed just as they had been transcribed by the researcher (subsequently referred to as "Observer 1" or "01"). Speaker turns were labeled "A" and "B", and capitalization conferred a degree of interpretation on the transcripts, but no punctuation was used and no evidence of 01's structural analysis was
present. This set of transcripts provided the data from which reliability measures were obtained.

In order to train an independent observer (subsequently referred to as "Observer 2" or "O2") a separate set of 12 transcripts was created. No member of this set was in the set of 28 referred to above. Six were used to illustrate the use of structural categories and six were used to test the effectiveness of observer training. Some effort was made in selecting these twelve to provide as much variety as possible both in category type and structural assignment. The six test conversations were presented to O2 in exactly the same format as the set of 28 that were actually used to compute reliability measures.

The second observer was a 37 year old male with considerable background in psychology, but with no knowledge of any Study IA results or interpretations.

He was given explicit written instructions during training, and they are reproduced in Appendix A. Discussion during the test session of training was kept to a minimum, but discussion of the test results (i.e., concerning the match or lack of match between O1 and O2) was encouraged.

On the basis of the test results on six conversations,
It was decided to run five more test conversations. As before, discussion was kept to a minimum while O2 scored the transcripts, but discussion was encouraged while O1 and O2 reviewed matches.

Observer 2 was then given the set of 28 randomly selected transcripts along with all the training material he had used and he was asked to make structural assignments to the 28 on his own and without O1 being present.

B. Scoring Agreement

There were various levels of possible agreement between observers. The least stringent level was FORM, wherein the structural assignments are categorized as linear, simple embedded, complex embedded, etc., and agreement can be assessed with Kappa (Cohen, 1960, 1968). Observers could agree or disagree about the numbers of categories a conversation should be assigned independent of the value (like "Time", "Operator", "Price", etc.) given those categories, and Pearson's $r$ can be applied to the data that make up the level called NUMBER. We could also ask the question: when observers are in agreement about the number of categories a conversation covers, to what extent do they agree about the value of those categories? This is answered again with Kappa, and the level was called...
CATEGORIES. Finally, when there is agreement about the number and value of categories, how much agreement is there about the sequential arrangement? This requires Kappa once again and was designated SEQUENCE.

Each of these levels really yielded a pair of levels, because in Study IA it was decided that categories can be divided into "basic" (4 of them) and "non-basic" (twelve of them). Accordingly, agreement could be looked at across just four categories or across all sixteen. Agreement should be most difficult to attain for sixteen categories at the SEQUENCE level.

By way of summary, the original four levels without the basic/non-basic distinction included along with their implied theoretical probes are presented below:

**FORM**: Do observers agree about the overall relationships between conversational subgoals (or happenings)?

**NUMBER**: Do observers agree about the numbers of subgoals (or how many things happened) within conversations?
**CATEGORIES**: Do observers agree about what the conversational subgoals were (or what happened)?

**SEQUENCE**: Do observers agree about the specific relationships between conversational goals (or happenings)?

**RESULTS**

Agreement between O1 and O2 at all levels was extremely strong. Overall, there were 22 (or 78.6%) exact matches in structural assignments. Three of the non-matches were due to O2 not following instructions and thereby making "illegal" category assignments. Only three of the non-matches were due to real disagreements between O1 and O2.

Kappa was 1 at all three levels--FORM, CATEGORIES, SEQUENCE--for both four basic categories and 16 basic plus non-basic categories. Pearson's r, which is applicable to NUMBER, was 1 for four basic categories and was 0.967 ($\sigma_{xy}=95.3$, $S_x=1.795$, $S_y=1.961$; significant at the .01
level) for all sixteen categories.

**DISCUSSION**

The context in which interobserver reliability was measured actually worked to minimize agreement. Observer 2 was male and very unpracticed at making appointments to get his hair cut (he reported *never* having made such an appointment), discussion of how to categorize conversations was kept to a minimum, and training involved exposure to only 18 conversations fully analyzed by O1. In spite of these factors, powerful agreement in structural assignment was obtained without O1 and O2 engaging in any discussion for the purpose of resolving disagreements. Thus, there is strong support for the objectivity of the subgoal categories and structures identified in the conversations.

The results of this study also lend support to the idea that native speakers have definite intuitions about subgoal relationships within conversations, and that they share these intuitions with other native speakers. It seems that people naturally see others as having goals when talking. One can speculate further and make a tentative commitment to the notion that these intuitions arise
because speakers possess knowledge about how to achieve desired states of affairs by talking with other people. Study IIA was addressed directly to this claim.
STUDY II

PARTS A and B

Restructuring Tasks and Naturalness Ratings

To this point, some objective regularities in a set of collected conversations have been described and they lead to the conclusion that subgoal structure exists within the set, that some of these structures are more popular than others, and that there are some dependencies between structural elements and the structures within which they participate. In the present study we try to provide evidence for the psychological reality of these external regularities. Specifically, it was predicted that people who might be expected to engage in these conversations possess knowledge about the kinds of structural relationships that are apparent in the conversations themselves.
INTRODUCTION

What task can be given to subjects to tap their implicit knowledge of conversational structure of the type discovered in Study IA? Asking subjects to resequence naturally occurring conversations for getting hairdresser appointments that had been scrambled seemed an appropriate choice since it has been used by other researchers (Clarke, 1975; Kent, 1977; Kent, Davis and Shapiro, 1978, 1981). In those studies subjects were provided with randomly ordered dialogue generated from either spontaneous or artificially elicited conversation. Their ability to correctly resequence specific types of conversation between friends versus strangers, between speakers constrained or not to use certain syntactic constructions, and between speakers from a subculture compatible or incompatible with the subjects' yielded an index of conversational structure as well as evidence that conversationalists possess mutually
shared knowledge about sequencing rules. Without making a commitment to the idea that sequencing rules are stored in memory, this general method was adopted with a few modifications for the present study.

METHOD

Two conversations were selected from the 93 useable transcriptions in Study IA and typed on index cards, two speaker turns per card, with A and B identified. This departs from the method used in the studies cited above which used one speaker turn per card without identifying the speaker. In initial testing for restructuring accuracy, this arrangement proved to be too difficult even with speaker identification. Subjects tended to get adjacent $A_1B_1$ turns correctly sequenced (and these eventually were presented on a card as a pair) but they hardly ever made the correct transition from $B_1$ to $A_2$. It was hoped that pairing “easy” turns on a card would force subjects to pay attention to the overall structure of the conversation rather than just the local structure. As well, the A and B speaker identifications were left intact on the cards. Notice also that, unlike the transcripts the cards were created from, conventional punctuation has been used. It
was included in order to avoid the possibility that subjects who are used to the conventions of written speech might focus more attention on the oddity of no punctuation than on the task at hand. The two conversations used in the restructuring task are presented below. Each number indicates a separate card. Thus, if a subject who was handed a random ordering of cards were to hand back a set of cards in numerical order she would have restructured the conversation completely correctly. The subject, of course, did not receive numbered cards.
1. A. Morning. The Oak Room
   B. Yes. I'd like to make an appointment.

2. A. Okay. For when?
   B. Friday morning.

3. A. Alrighty. What's it for?
   B. Shampoo cut and a blow dry.

4. A. Ah. What time?
   B. About eleven.

5. A. Yes. That's fine. What's your name?
   B. It's Morag.

6. A. Okay. Can you spell that?
   B. M-O-R-A-G

   B. Yeah.

8. A. Okay.
   B. Thank you.

9. A. Okay.
   B. Bye.
1. A. Irene's Beauty Salon
   B. Yes. I'd like to make an appointment

2. A. Unhuh. For what day?
   B. Ah. Monday or Tuesday morning.

3. A. Unhuh. And what was that for? A perm, a cut, or
   B. Cut, shampoo and a blow dry.

4. A. Unhuh. So which day did you want? Monday or Tuesday?
   B. Monday's fine.

   B. Ten thirty's great.

6. A. And your name?
   B. It's McRay. M-C

7. A. Unhuh.
   B. R-A-Y

   B. Yeah.

   B. Okay.

10. A. Okay.
    B. Thanks. Bye.
These two conversations were chosen for the restructuring task because they satisfied the following criteria:

1. They are both examples of three-element conversations, and structurally they are cases of complex embedding as defined in the first study. That is, both are describable as $T^0S^T\bar{C}N\bar{S}conf$.

2. They are good examples of what naturally occurs in that they are not linear, they start with T, and the third element beyond T and N (which must occur by definition) is S.

Thus, on three out of four measures both conversations are representative of what generally takes place, and in a particular sequence.

3. The two are roughly equivalent regarding numbers of cards the subjects are presented (nine and ten respectively).

4. They are approximately equally "loose", or "tight", as the case may be.

What is meant by the "looseness/tightness" criteria is
briefly as follows: if one pays some attention within each conversation to possible sequencing restrictions between cards that arise because of something other than structural restraints, intuitively there seem to be very few. As will be discussed later, there were very few according to the subjects’ performance as well. That is, in the first conversation (called "Oak" for short) it appears that card 6 must come after card 5 because the "that" in "Okay. Can you spell that?" just could not refer to "an appointment" or "a blow dry" or anything else B has mentioned. Likewise, card 7 must follow card 3, though possibly for a more complex reason: A is not very likely to get a confirmation from B about the services she desires and then later ask what services B wants. Similarly, in Irene it appears that 4 must follow 2 for the reason that the opposite ordering would result in a situation in which A had determined B’s preferred day and then went on later to initiate the determination all over again. Card 7 must follow 6 partly because one commonly spells the beginning of one’s name first, and then the end. Card 3 must come before 8 for the same reason that 3 came before 7 in Oak.

Eighty-three female subjects, 18 years or over were run in small groups; all were native speakers of English.
The following instructions were read to each group:

On these cards are all the parts of a telephone conversation between someone called 'A' and someone called 'B'. B is phoning in order to get an appointment at a hairdresser. Currently the cards aren't in the order in which the conversation occurred, although the order of A and B talking on any one card is the order in which it happened. I'd like you to order the cards in the way you think the conversation occurred. Take as long as you want. I'm not interested in the amount of time you take, only in your being happy with the ordering you've got.

Subjects were encouraged to work independently. After they had finished restructuring one conversation they were given the other one to restructure. Oak and Irene were presented to them in a counterbalanced order.

RESULTS

Tables 2 and 3 present a summary of the data. The Oak total is only 82 because of a scoring error that resulted in data loss for one subject.
TABLE 2

Frequencies of Obtained Card Sequences for the "Oak" Conversation

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>SEQUENCE</th>
</tr>
</thead>
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<td>1 3 7 2 4 5 6 8 9</td>
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<tr>
<td>12</td>
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<tr>
<td>2</td>
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<td>1</td>
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<td>1</td>
<td>1 5 6 3 7 4 2 8 9</td>
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<td>1</td>
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<td>1</td>
<td>1 3 2 4 5 6 8 7 9</td>
</tr>
</tbody>
</table>

**TOTAL=82**

\(^a\)This sequence represents the correct restructuring.
### TABLE 3

**Frequencies of Obtained Card Sequences for the "Irene" Conversation**

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<thead>
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<th>FREQUENCY</th>
<th>SEQUENCE</th>
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<tr>
<td>7</td>
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<tr>
<td>1</td>
<td>1 3 2 5 4 9 6 7 8 10</td>
</tr>
</tbody>
</table>

**TOTAL=83**
As is readily apparent, correct resctructurings (i.e., the ones that duplicate the conversations as they actually occurred) were obtained remarkably infrequently compared with incorrect resctructurings.

Because the initiation and closing of the conversations was not under scrutiny, the cards of interest for Oak were numbers 2 through 8 and for Irene, 2 through 9. The probability of getting any sequence of 7 cards by chance (for Oak) is 0.0002, and the probability of getting any sequence of 8 cards by chance (for Irene) is 0.00002. Removing the 5-6 and 3-7 sequences in Oak from the null hypothesis, or the 2-4, 6-7, 3-8 sequences in Irene (since they could be considered as "given" by hints) makes the probability of a chance occurrence of a correct sequence of either conversation .008.

The probability of getting two correct resctructurings by chance is small (for instance, 0.0000004 for Oak with "hints") the probability of getting 16 incorrect resctructurings by chance is extremely small (0.0002 to the sixteenth power). Similar comments summarize the Irene results. Thus, despite the fact that there were a significant number of correct resctructurings (i.e., a number likely to be obtained by chance less than 5% of the time) it was difficult to maintain that this variety of
significance is meaningful. It is the popularity of what was incorrect that needs to be accounted for.

Some incorrect restructurings were, in fact, more popular than others. For Oak, $X^2(15, N=82) = 53.7, p<.01$, where $F_e=5.1$ for each of 16 categories and $F_o=16, 12, 11, 7, 3, 3, 2, 2, 2, 2, 2, 4, 4, 5, 5$. For Irene, $X^2(15, N=83) = 25.1, p<.05$, where $F_e=5.2$ for each of 16 categories and $F_o=11, 7, 6, 6, 5, 3, 3, 2, 2, 2, 2, 2, 8, 8, 8, 8$.

DISCUSSION

Failure to obtain the expected results could be attributed to any one, some, or all of the following:

A. The task does not call upon knowledge about conversational structure. For example, once subjects placed card 6 after card 5, and 7 after 3 in Oak (and then adhered to the same sorts of coherence restrictions in Irene), they may have felt that they had done what was expected of them (solved the problem the experimenter set them). Subjects may have believe that beyond those sequencing requirements anything would do since there were no other coherence
relationships across cards to adhere to or to violate.

B. Callers just do not have the knowledge about conversational structure that callees have because they do not lead the conversation.

C. The 93 conversations collected and analysed in Study IA were found to have structure, most popular starts, etc., because appointment book format artificially imposes regularities.

D. The 93 conversations the structural analysis is based upon are abnormal because they are not completely natural and spontaneous, so they yield structural regularities that do not exist in real conversations that the 83 subjects hold.

Although explanations (A) through (C) are reasonable, we suggest that the major reason for failure was that the restructuring task did not engage subjects’ knowledge of conversational structure. (Explanation D is considered in Study IIIB.)

Evidence for this assertion is to be found, we believe, in an analysis of the bases of the apparent popularity of a small set of incorrect restructurings. This
analysis is based on four measures that are not entirely independent of each other, and that might have accounted for the results. All four are based on the assumption that subjects are sensitive to conversational structure, either the local structure across pairs of cards, or the more global structure that has been emphasized in this research. Three (slot scores, reactive scores, and proactive scores) have been used by Clarke (1975) to measure the resequencing ability of subjects working with natural and generated conversations. The fourth (sequential restraint score) was added because it provided a natural extension to the notion of sequential restraint that was used to define conversational tightness and looseness. Here are the four defined. None of them distinguishes popular sequences from unpopular ones:

**slot score** - a count of the number of occurrences of card number \( n \) in \( n \)th position in the series

**reactive score** - a count of the number of occurrences of card \( n \) followed immediately by \((n+1)\)

**proactive score** - a count of the number of occurrences of card \( n \) followed by any other followed by \((n+2)\)
**sequential restraint score** - a count of the number of correct sequential relationships beyond those defined by coherence across cards; for instance, in Oak 5-6 and 3-7 do not enter the count, but 5-7 and 5-8 would, and so would 2-3, 2-4, 2-5, 2-8, 3-4, 3-5, 3-8, 4-5, 4-7, 4-8, 5-7, 5-8, 6-7, 6-8, and 7-8.

The subgoal structural analysis developed in Study IA provides the most meaningful interpretation of what happened. It was possible to assign to each restructuring sequence a subgoal structure. For instance, the sequence that 16 subjects created for Oak is SSconf.TN and the sequence that occurred with a frequency of 3 for Irene was NTSSconf. When looked at this way, it becomes clear that subjects were disinclined to break particular "happenings" up. Both conversations, recall, were examples of complex embedding, yet only 16.3% of subjects over two conversations produced conversations with any embedding at all and only 29% were willing even to separate Services from Services Confirm, thereby usually producing decidedly odd runs like:
A. Unhuh. And what was that for? A perm, a cut, or
B. Cut shampoo and a blow dry.
A. Uhm. Okay. Cut and blow dry. Right?
B. Yeah.

Fewer than half (42%) of all restructurings included embedding, an S/Sconf. split, or both. Under the circumstances it is not surprising that subjects hardly ever hit upon the correct restructuring that requires them to sequence cards in a way that must have seemed somehow "unnatural" despite the fact that the sequence is exactly what naturally occurs. The suggestion is, then, that the restructuring task is not tapping the appropriate knowledge about conversational subgoal structure. Much of the problem may be motivational since the subject was asked to do something that is rather difficult if done correctly, and rather boring. Further, once the "tight" restrictions are applied to card sequences, several different sequences are really quite acceptable, if not correct, so there may have been the inclination to hand back any one of them and be done with the task. Given this problem, we might then ask if the restructured conversations reflect anything subjects might know or believe about conversations that is congruent with the results of Study IA. The evidence here is that they do. Subjects demonstrated at least some sensitivity to
conversational structure because they overwhelmingly preferred to begin a conversation with Time or Services (89.6% begin with T or S) and they preferred to avoid a Name start (9.7%). Both characteristics are typical of the conversations collected in Study IA.

What can be concluded most generally is that this study failed to demonstrate that subjects have knowledge of conversational goal structure, but only if the ability to correctly restructure a scrambled conversation can be said to engage that knowledge reliably. The implication of the results considered in detail is that possibly for motivational reasons, or because subjects interpreted the task in an inappropriate way, restructuring may not accomplish what is being demanded of it. Yet there is room for optimism here: restructuring at least allows subjects to express opening preferences that reflect the structure of the real conversational world.

An important finding concerns the notion of conversational looseness/tightness (see p. 117). Subjects generally agreed with the researcher's intuitions: for both conversations, not a single restructure resulted in a violation of (for Oak) 6 must follow 5, 7 must follow 3 and (for Irene) 4 must follow 2, 7 must follow 6, and 8 must follow 3. However, as has been reported earlier, no other
sequential orders were adhered to by all subjects.

A further result was that certain types of knowledge about pragmatic conversational structure appear to be independent of knowledge about syntactic and semantic structure (insofar as the latter two can be said to exist at all across the utterances of separate individuals). The fact that subjects were so good at recreating certain pairs of sequences (the ones that account for the "tightness") and so variable in their ability to recreate others supports the idea that two sorts of knowledge are involved. In other words, in "loose" conversations there are few hints in what was said or in how it was said as to what came first, whether what came next was closely related to what came first (a linear conversation) or not (possibly an embedded conversation). It is even plausible to claim that the hints of the sort described in the Method are ultimately referrable to what people might reasonably be expected generally (as opposed to specifically within a conversation for getting an appointment) to do, (as opposed to say).

Nevertheless, if people have knowledge about the possible subgoal relationships that hairdresser appointments can have, they ought to be able to use that knowledge even in the absence of hints, whether those hints
are described as syntactic, semantic, or general pragmatic ones. That is why asking them to restructure loose conversations is really a very demanding test of the current hypothesis. The knowledge about conversational structure that they were being asked to utilize is specific to the appointment-getting task, whereas the hints that confer some degree of tightness on the conversations are based on more general principles about how people should be expected to behave (e.g., they do not do something and then do it all over again, they do first things first and last things last, etc.).

With the above issues in mind, a new task was developed in an attempt to tap subjects' knowledge of the conversational structure of appointment getting in a more adequate way. The task and results are described in Study IIB.
It was suggested that a major methodological problem with the restructuring task used in Study IIA was the subjects' unwillingness to consider more than just a small set of seemingly "good," yet probably incorrect sequences. Accordingly, to get around this problem, we suggest that subjects should be given the naturally occurring sequence along with sequences that have been judged by subjects in Study IIA as "good," and require them to pick the real conversation.

METHOD

The resequencing data from Study IIA were used in order to select two Oak sequences and two Irene sequences
that, although incorrect, were the most popular. For Oak these were the sequences created 16 and 12 times respectively (1 3 7 2 4 5 6 8 9 and 1 2 4 5 6 3 7 8 9) and they had structural assignments describable as SSconf.TN and TNSSconf. For Irene, they occurred 11 and 7 times respectively (1 2 4 5 3 8 6 7 9 10 and 1 3 8 2 4 5 6 7 9 10) and they both had structural assignments TSSconf.N. (Structural assignments ignored the card 9 intrusion that occurred in the second conversation since it read "A. Okay Fine."/"B. Okay" and as such, it seemed simply to close whatever occurred ahead of it.)

The two popular restructurings along with the naturally occurring version were typed in random order on a single page, one page for Oak and one page for Irene.

Fifty-three female native speakers of English, all 18 years or older, were run in small groups. Irene and Oak were presented in a counterbalanced order, and the following instructions were read to all subjects:
On this page are three versions of a single telephone conversation between someone called 'A' and someone called 'B'. B is phoning in order to get an appointment at a hairdresser. One of the three versions is written down exactly as the real conversation occurred. The other two versions are out of order. Decide which version seems to you to be the most likely to have actually occurred and put a one next to it. Put a two next to the one that is second most likely to have occurred and put a three next to the one that is least likely to have occurred.

Take as much time as you need to decide between the three versions. I'm not interested in the time it takes you, but I am interested in your being happy with the ratings you make.

I'll give you one other page after you finish this one. It's a different conversation. Do the same thing with the three versions.

Please don't look at what other people are doing.

RESULTS

The results are summarized in Tables 4 and 5.
**TABLE 4**

*Frequencies of Obtained Ratings for Three Forms of a Conversation*

<table>
<thead>
<tr>
<th>FORM</th>
<th>naturally occurring</th>
<th>most popular restructuring</th>
<th>2nd most popular restructuring</th>
</tr>
</thead>
</table>

**RATING**

<table>
<thead>
<tr>
<th></th>
<th>&quot;OAK&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>most natural</td>
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<tr>
<td>2nd most natural</td>
<td>21</td>
</tr>
<tr>
<td>least natural</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>&quot;IRENE&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>most natural</td>
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</tr>
<tr>
<td>least natural</td>
<td>21</td>
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TABLE 4 continued

Frequencies of Obtained Ratings for Three Forms of a Conversation

<table>
<thead>
<tr>
<th>FORM</th>
<th>naturally occurring</th>
<th>most popular</th>
<th>2nd most popular</th>
</tr>
</thead>
</table>

RATING

"OAK" and "IRENE" COMBINED

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</tr>
</thead>
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</tr>
<tr>
<td>least natural</td>
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<td>36</td>
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</tbody>
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TABLE 5

Frequencies of Obtained Form Orderings

<table>
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<tr>
<th>FORM ORDERING</th>
<th>FREQUENCY</th>
</tr>
</thead>
</table>

"OAK"

<table>
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<tr>
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<th>2nd most natural</th>
<th>least natural</th>
<th>FREQUENCY</th>
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</thead>
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<td>B</td>
<td>C</td>
<td>16</td>
</tr>
<tr>
<td>C</td>
<td>B</td>
<td>A</td>
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<td>B</td>
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</tr>
<tr>
<td>C</td>
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<td>B</td>
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</table>

"IRENE"

<table>
<thead>
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<th>least natural</th>
<th>FREQUENCY</th>
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<td>12</td>
</tr>
<tr>
<td>C</td>
<td>B</td>
<td>A</td>
<td>9</td>
</tr>
</tbody>
</table>

\(^a\) A is the naturally occurring form, B is the most popular restructure, C is the 2nd most popular restructure.
Chi Square tests run separately on the two conversations, and based on the distribution of obtained form orderings, the tests were significant at the .01 level for Oak ($X^2[5, N=53]=16.7$) and at the .05 level for Irene ($X^2[5, N=53]=12.09$). As well, for Oak, 51% of the subjects thought that the naturally occurring version was the most natural, and for Irene 43% expressed the same opinion. The most popular restructure was chosen as the naturally occurring form 21% of the time for Oak and 28% of the time for Irene. The second most popular restructure was chosen as the naturally occurring form 28% of the time (Oak) and 29% of the time (Irene).

The pattern of results displayed in the table of frequencies of obtained ratings, especially for the two conversations combined, is worthy of note: generally speaking, what occurs naturally was usually rated as most natural; the most popular restructure was usually chosen as the second most natural form; the second most popular restructure was deemed to be the least likely to have occurred naturally.
DISCUSSION

In contrast with the results of Study IIA, the present study provides clear evidence that conversationalists know about commonly occurring pragmatic structures. That subjects possess this type of knowledge provides an explanation of their ability to select the "correct" conversation even when distractor items are created to be reasonable and thus, highly confusable alternatives.

What in the last study was a most popular restructure turns out here to be the second most likely conversation to have occurred naturally and what was a second most popular restructure becomes the least likely to have occurred naturally. This confers a degree of generality on the results of Study IIA.
OVERALL DISCUSSION OF STUDIES IIA AND IIB

There are essentially two related issues raised by the findings in these two studies. One relates to the contrast between what subjects can and cannot do, and the other involves deciding what interpretations may be drawn from studies that rely on restructuring conversations as a means of assessing what people know.

It was argued initially that restructuring seemed like a reasonable tool for assessing what conversationalists know about how something very specific gets done. The conversations used were highly representative of what restructuring subjects should have experienced, but they were very deficient in clues to specific pragmatic structure. Accordingly, they should have provided a strong test of the idea that subjects know about specific pragmatic structures independently of other things they know about conversations. Further, they also should have provided also a reasonable test (i.e., one that could be passed). The data did not support these claims. It was suggested, therefore, that subjects' interpretations of the restructuring task made the test an unreasonable one.

We suggested next that the source of the difficulty in
restructuring, which disappears when subjects are asked to make naturalness ratings, is subjects' failure to consider enough possible card orderings (and especially embedded orderings) before deciding on the best one. This analysis is closely related to the dual process theory of retrieval (Anderson and Bower, 1972; Kintsch, 1970) that contends that recall (analogous to the restructuring task here) involves a generation stage that recognition (analogous to the naturalness task here) does not include. Recall is generally more difficult than recognition for this reason. If this account of the present findings is reasonable then any factor that encourages the generation of many sequences, or the correct sequence, might be expected to increase the proportion of correct restructurings. For example, telling subjects that many sequences will seem good, that only one is correct, and that those subjects who get the sequence correct will have the opportunity to participate in a lottery with a big cash payoff might be effective if the current interpretation of the results is accurate.

One further observation is noteworthy. One might have been tempted to argue that subjects' failure to restructure adequately indicates that the results of Study IA were artificial in the sense, for example, that callers hardly ever initiate conversations with "Yes. I'd like to make an
appointment," or that callers never ask for an appointment without specifying a time, etc. Thus, one might speculate that the conversations collected in Study IA are never in fact experienced by Study IIA subjects, and so Study IA conversations are difficult to restructure. The results of Study IIB lay that particular criticism to rest.

In summary, the results of Studies IIA and IIB lend credibility to the notion that language users possess knowledge of conversational subgoal relationships, and that this knowledge is at least partly independent of other linguistic knowledge.

The second issue is best discussed in relation to other research that has utilized a restructuring methodology. We suggest that Clarke (1975) has placed rather too much emphasis on restructuring success. In his data, slot scores do not approach significance. Further, for reactive and proactive scores (which measure sensitivity to local structure and not to the more global structure of the conversation) if just one out of ten restructuring subjects is accurate for a particular card, the result could not have been due to chance (p<0.05). The problems of interpreting this type of "significance" were discussed in Study IIA. Basically, Clarke's (1975) subjects really do not do very well, and Clarke has provided very
little in the way of evidence for language users knowing a “set of sequencing procedures or rules”. Yet, subjects might know quite a lot (although not necessarily a set of procedures or rules) and as we have seen, a restructuring task might not engage that knowledge adequately. This may be the case in Clarke’s study.

The problem is compounded by the fact that if restructuring is attributed with power to reveal mental contents within the area of conversational expertise, the inability to do something can lead to false conclusions. This seems to have happened in the Kent, Davis & Shapiro work mentioned earlier (1977, 1978, 1981). In many of these studies, the researcher reasons as follows: if subjects cannot restructure then either the conversations are not orderly (they do not follow the “rules” very closely), or the subjects themselves do not know the rules that were followed, or both. The application of this reasoning results in conclusions such as (1) conversing acquaintances use idiosyncratic sequencing rules compared to strangers who use “public” ones; (2) there are cultural differences in sequencing rules; (3) some conversations follow sequencing rules more closely than others.

Intuitively, these three conclusions are reasonable. However, they do not follow from the data used to support
them because the inability to restructure a conversation likely says as much about the restructuring task as it does about what subjects know about conversations.

This is, of course, not to detract from the usefulness of the restructuring task under the right circumstances—ones that make reasonable demands on subjects and, thus, allow for a fair test of what they might be expected to know. The likely importance of motivational factors in this regard has already been discussed. Furthermore, "tight" conversations, which allow subjects to rely on hints that are not based on specific knowledge of subgoal relationships, might make a restructuring task appropriate for elucidating the nature of those hints. Similarly, subjects have very little difficulty in unscrambling $A_1B_1$, $A_2B_2$, ... sequences and they must fall back on a mental representation of something in order to accomplish this, so restructuring seems to be worthy in this setting as well.
A major concern raised about the interpretation of Study IIA was that subjects might have had difficulty restructuring conversations (collected in Study IA) because the conversations were not completely natural. The conversations of Study IA were collected between English speaking strangers, one of whom was a confederate instructed not to lead, to use a single opening, and to request the same services each time. This effort to "standardize" a variety of conversation was directed toward providing a clear display of any structural regularities, should they exist. Having discovered evidence for such regularities, it seems appropriate at this point to examine conversations collected under more variable circumstances. This permits a test of generalizability across research methods (from controlled observation to naturalistic
observation). As well, scrutiny of data that contrast with and vary more than the first set of 93 conversations may yield generalizations that are similar enough to the first set to permit the formulation of some abstractions that transcend methodological and contextual specificity. Those abstractions could satisfy five of the predictions made in the interpretation of the Study IA data (see pp. 98-103). They were: in linear conversations, S and O should close before T opens; T and N should always occur; S and O should occur with more variability than T and N; T is the most important accomplishment; and S does not occur more frequently than O simply because one operator establishments happened to be contacted.

METHOD

A. Collecting and Transcribing the Conversations

The same automatic telephone recording device used in Study IA was attached to the telephone of a single beauty salon in Vancouver. Salon staff were aware that recordings were being made. They knew that the researcher was interested in conversations with clients who were trying to make an appointment. Salon staff were not informed of any
research hypothesis, and, of course, callees did not know that a recording of their conversation was being made. The salon owner was paid for the salon’s participation in the research.

Recordings were made continuously from Mondays to Saturdays for approximately six weeks.

Transcriptions of conversations that became data were made according to the same guidelines as were used in Study IA.

B. Screening Conversations

There were originally 78 conversations for getting appointments—seven between strangers, and the rest between acquaintances. None of the stranger conversations was included in this study and six of the acquaintance conversations were discarded—three because they were instances of appointments being made on behalf of a third party, and three because they involved an interruption where an apparent exchange of information took place between the first callee who answered the phone and the second one who came to the phone and completed the conversation. The following criteria from Study IA for
discarding a conversation were not applied here: caller was a non-native speaker of North American English, caller led, appointment was not completed. To have required the first would have severely reduced the corpus; the second was suspended because, normally, callers may in fact lead conversations or parts of conversations; the third seemed dispensable because one goal of this study is to allow the real conversational world to define "appointment." A fourth attribute that led to a conversation being discarded in Study IA involved the presence of interruptions. Interruptions occurred quite frequently in these data, but they were the sort in which the caller would ask for or be handed over to a second callee, and the second callee began what was really the conversation proper that resulted in an appointment being made. Under these circumstances, the talk between caller and callee 1 was discarded and included as data was only the talk between caller and callee 2. Only three times, as referred to above, did this interruption seem to involve an exchange of appointment-relevant information between callee 1 and callee 2, and both parts of this conversation were discarded.

Ultimately, six conversations between acquaintances were discarded as explained above, plus seven non-acquaintance conversations, plus six more conversations between acquaintances that were difficult to assign a
structure to (see below). Thus, all analyses are based on 59 conversations between acquaintances. Recall, by way of contrast, that all the conversations in Study IA had a standard appointment bid opening and they were between a confederate and a callee who were not acquainted.

C. Participant Characteristics

The salon staff who served as callees are comprised of (a) one female who is a complete bilingual, (b) one male native speaker of North American English, and (c+d) two females who speak English as a second language. Tabulation of the numbers of conversations held by the various callees is presented in Table 6.

Table 6

Numbers of Conversations Held by Each of Four Callees

<table>
<thead>
<tr>
<th>CALLEE</th>
<th>No. OF CONVERSATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>28</td>
</tr>
<tr>
<td>b</td>
<td>3</td>
</tr>
<tr>
<td>c</td>
<td>18</td>
</tr>
<tr>
<td>d</td>
<td>10</td>
</tr>
</tbody>
</table>
This salon serves men as well as women, and the conversations categorized as to the sex of the caller are presented in Table 7.

Table 7

<table>
<thead>
<tr>
<th>SEX</th>
<th>No. OF CONVERSATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>27</td>
</tr>
<tr>
<td>F</td>
<td>32</td>
</tr>
</tbody>
</table>

RESULTS

A. Conversational Structure

Initially, an attempt was made to assign a structure to each of the 59 conversations by using the same 16 categories from Study IA. In order to sort all talking turns exhaustively into categories it was necessary to add four more categories:
**Intimate talk (I):** Either party is engaged in activities directed toward maintaining or reaffirming a personal relationship between acquaintances; this talk is, at least outwardly, unrelated to the main purpose of the conversation, which is to make an appointment.

**Callee (C):** Either party is engaged in activities directed toward establishing the identity of the callee (A).

**Name Confirm (N. conf.):** Either party is engaged in activities directed toward establishing a mutual understanding about the already established identity of the caller. This category can be used only after the "Name" category has been applied to a turn or turns.

**Appointment (appt.):** Either party is engaged in activities directed toward establishing that the caller desires an appointment; "appointment" or its synonym must be explicitly mentioned.

**A note regarding "Appointment":**

When in B's first turn, an appointment request was made explicitly or implicitly, "appt." was not assigned.
because this made B's opening turn comparable to B's opening turn in Study IA, and the structural analysis there was done only for talking that occurred beyond the request for an appointment. In these data, an explicit appointment request in a first turn had to have the word "appointment" in it. Some examples are:

1. Yes I'd like to make an appointment for today if possible

2. Yes I was wondering if I could make an appointment for later today

3. Hi Could I make an appointment for a haircut this afternoon

None of these get "appt." assigned, but the first two get a "Time open" assigned. The third one gets a "Service open" and a "Time open" assigned to it.

Following are some examples of implicit appointment requests in first turns. They do not get "appt." assigned to them.

1. Ah Sue It's Jim Dodge I was in about a month ago I just wonder if you had any free time this morning or early this afternoon

2. Ah Has Sue any time on Thursday

3. Yeah It's Tim Smith here Is there a chance I could get my hair cut shortly
The first example was assigned $N(OT^0)$, where what occurs in parentheses serves the purpose of requesting an appointment in an implicit manner. Likewise, the second example was assigned $(OT^0)$ and the third was assigned $N(ST^0)$.

These implicit appointment bids also occurred at turns other than B’s first, and at those placements they received the same treatment. In our data, there is no particular preference for implicit as opposed to explicit appointment requests (34 and 25 conversations, respectively).

A careful scrutiny of all 59 conversations revealed that the minimal opening used by B in Study IA ("Yes I’d like to make an appointment") occurred very infrequently. In one conversation the caller came close in her first turn: "I was wondering if I could make an appointment", and another caller in her second turn said, "I’d like to have a reservation" (in her first turn she identified herself). Basically, in these data callers were inclined to specify one or more of the following as they implicitly or explicitly requested an appointment: Time, Operator, Services.

There was a non-significant trend for appointment requests in these 59 conversations to be made in turns other than the first one (36 conversations versus 23);
Category assignments were made to all speaking turns in each of the 59 conversations the same way they were made to the conversations in Study IA, and without regard to whether A or B was responsible for particular openings or closings.

As for structure, it is necessary to determine if T,S,N,O were in any sense basic since these are the elements in terms of which structure was defined in Study IA. In this set of conversations there was a significant preference for non-basic elements (everything except T,S,N,O) to occur: 40 conversations versus 19; $X^2(1, N=59)=6.76, p<.05$. However, there was a non-significant preference for non-basic elements to be unobtrusive (i.e., to occur after T,S,N,O have been completed): 26 conversations show intrusion, 33 do not; $X^2(1, N=59)=0.6, p>.05$. If lack of intrusion is redefined somewhat by allowing what is non-basic to occur around a central "core" of basic elements (that is, non-basic elements may occur early or late as long as basic elements occur centrally and finish without interruption, and this arrangement now counts as a non-intrusive one), there was a significant preference for this non-intrusion: 38 conversations versus 21; $X^2(1, N=59)=4.3, p<.05$. 

$X^2(1, N=59)=2.44, p>.05$. 
With this re-definition of non-basic then, it was reasonable to proceed as in Study IA and describe conversational structures that ignore the presence of non-basic elements.

Following Study IA, restrictions were placed on the generation of possible random structures under the null hypothesis—the same five from that study (see pp. 91-92). Table 8 presents a comparison of obtained structures and possible structures using the same descriptive categories as in Study IA.
Table 8

Obtained and Possible Category Sequences for 59 Conversations

Sequences for one element

<table>
<thead>
<tr>
<th>POSSIBLE</th>
<th>OBTAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. T</td>
<td>2</td>
</tr>
<tr>
<td>b. S</td>
<td>0</td>
</tr>
<tr>
<td>c. N</td>
<td>0</td>
</tr>
<tr>
<td>d. O</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL POSSIBLE=0</td>
<td></td>
</tr>
</tbody>
</table>

Sequences for two elements (O,T)

<table>
<thead>
<tr>
<th>POSSIBLE</th>
<th>OBTAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. linear orders</td>
<td></td>
</tr>
<tr>
<td>OT</td>
<td>3</td>
</tr>
<tr>
<td>TO</td>
<td>0</td>
</tr>
<tr>
<td>b. simple embedding</td>
<td>0</td>
</tr>
<tr>
<td>c. overlap</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL POSSIBLE=5</td>
<td></td>
</tr>
</tbody>
</table>

Sequences for two elements (N,T)

<table>
<thead>
<tr>
<th>POSSIBLE</th>
<th>OBTAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. linear orders</td>
<td></td>
</tr>
<tr>
<td>NT</td>
<td>7</td>
</tr>
<tr>
<td>TN</td>
<td>0</td>
</tr>
<tr>
<td>b. simple embedding</td>
<td>0</td>
</tr>
<tr>
<td>c. overlap</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL POSSIBLE=5</td>
<td></td>
</tr>
</tbody>
</table>

^There were no other two element conversations (i.e., no T,S or N,S or N,O or S,O)
<table>
<thead>
<tr>
<th>Sequences for three elements (T,N,O)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POSSIBLE</strong></td>
<td><strong>OBTAINED</strong></td>
<td></td>
</tr>
<tr>
<td>a. linear orders</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>b. simple embedding</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>c. complex embedding</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>d. overlap</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>e. overlap with embedding</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL POSSIBLE=34</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sequences for three elements (T,N,S)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POSSIBLE</strong></td>
<td><strong>OBTAINED</strong></td>
<td></td>
</tr>
<tr>
<td>a. linear orders</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>b. simple embedding</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>c. complex embedding</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>d. overlap</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>e. overlap with embedding</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL POSSIBLE=34</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sequences for three elements (O,T,S)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POSSIBLE</strong></td>
<td><strong>OBTAINED</strong></td>
<td></td>
</tr>
<tr>
<td>a. linear orders</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b. simple embedding</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>c. complex embedding</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>d. overlap</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>e. overlap with embedding</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL POSSIBLE=34</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 8 continued

Sequences for four elements

<table>
<thead>
<tr>
<th>POSSIBLE</th>
<th>OBTAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. linear</td>
<td>10</td>
</tr>
<tr>
<td>b. simple embedding</td>
<td>0</td>
</tr>
<tr>
<td>c. complex embedding</td>
<td>12</td>
</tr>
<tr>
<td>d. overlap</td>
<td>1</td>
</tr>
<tr>
<td>e. overlap with simple embedding</td>
<td>0</td>
</tr>
<tr>
<td>f. overlap with complex embedding</td>
<td>0</td>
</tr>
</tbody>
</table>

TOTAL POSSIBLE=294
Chi Square tests performed using a randomization method were significant beyond the .01 level for T,N, for T,N,O, for T,N,S, and for O,T,N,S conversations. See Appendix D for details of the statistical analysis. These conversations distributed themselves across combination types differently from what one would expect by chance. Thus, structure can be said to exist among this set of conversations.

B. Conversational Preference

Generalizations about conversational structural preference can also be drawn from these data.

1. There was an overall preference for three or four elements relative to one or two. The numbers of conversations having 1 or 2 or 3 or 4 basic elements are presented in Table 9.
Table 9

Numbers of Conversations Having One or More Elements

<table>
<thead>
<tr>
<th>NUMBER OF ELEMENTS</th>
<th>NUMBER OF CONVERSATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>one</td>
<td>2</td>
</tr>
<tr>
<td>two</td>
<td>9</td>
</tr>
<tr>
<td>three</td>
<td>26</td>
</tr>
<tr>
<td>four</td>
<td>22</td>
</tr>
</tbody>
</table>

As Table 9 shows, there was no obvious preference for any single number of elements, but there was an overall preference for three or four elements relative to one or two \(X^2[1, N=59, F_e=29.5] = 22.0, p<.01\).

2. There was a preference for linear conversations. There were 39 linear conversations and 20 non-linear conversations, and there was a significant preference for linear structures \(X^2[1, N=59, F_e=29.5] = 5.5, p<.05\).

3. Thirty-seven conversations began with \(N\), seven with \(T\), ten with \(O\), and five with \(S\). There was a significant preference for conversations to start with \(N\) \(X^2[3, N=59] = 46.2, p<.01\).

4. For three element conversations, there was no apparent preferred third element. There were 11 \(T,N,O\) conversations, 14 \(T,N,S\) conversations, and 1 \(O,T,S\)
The following descriptive points are related to analogous ones that emerged in Study IA:

5. Only T took an embedding. This was a methodological restriction in Study IA, but not in the present one.

6. N hardly ever embedded within T (four instances only, or 6.8% of the total). This was a rate comparable to the one found in the Study IA data.

DISCUSSION

This study demonstrated that naturally occurring conversations are structured in ways that are similar to ways that are characteristic of conversations collected in a more artificial context. The same subgoal achievement assignments can be made in an exclusive and exhaustive way. Also, basic and non-basic elements can be defined meaningfully. ("Basic" in this study is inclusive of the same concept used in Study IA.) Finally, the number of observed relationships between subgoal achievements is significantly smaller than all possible relationships. This
finding makes it unlikely that in Study IIA restructuring difficulty was due to either the absence or oddity of subgoal structure within conversations that subjects experienced in everyday life.

Predictions based on the interpretation of Study IA results are also confirmed by the present data. In this set of 59 conversations, 40 were linear, and the preference was significant. Since embedding is a consequence of needing to determine S and O before T can be finished, it was predicted that linear conversations should reflect that same need in a structurally specific way. This is exactly what was found: there were a disproportionate (78.1%) number of linear conversations incorporating a completed S or O or both ahead of T opening. Study IA and Study IIB conversations have in common the tendency to close T only after other things have been done, but the tendency has two modes of expression.

The second pair of predictions were a result of concluding that T and N are defining elements of conversations for getting hairdresser appointments, and that S and O occur mostly in order to facilitate T. Thus, T and N should always occur, but S and O should occur with more variability depending on the circumstances. In the present data there was a preference for more than two basic
elements to occur; in Study IA there was a preference for four. Thus, S and O appear with some degree of variability. By way of contrast, T occurred in each of the 59 acquaintance conversations, and although N failed to appear in five of them, there is good reason to believe that N was implicitly accomplished. In four of the five, A indicated in what she said (such as, "Okay then Mrs. Smith We'll see you tomorrow at two") that the identity of the speaker was known by her all along. In the fifth conversation missing an N, there was a great deal of intimate exchange (I), and although A gave no overt indication of having identified B, it is difficult to believe that she did not. The import of this is that two conversations assigned OT as a structure were really OT[N], one conversation assigned OTS was really OTS[N], and one conversation assigned T was really T[N], where brackets mean that N did not need to be determined explicitly by the provision of solicited ("And the name is?") or unsolicited ("Hi This is Bob Crull speaking") information. It is not always clear at what point A makes these implicit identifications or what information allows for them. Presumably quality of voice, services requested or even intimate exchanges revealed the caller's identity.

The fourth generalization from Study IA that needs to be evaluated using the acquaintance data is that T is the most important accomplishment. Actually, the acquaintance
data showed a significant preference for an N start (invariably and spontaneously initiated by B) and Study IA data showed a significant preference for a T start. It was partly on the basis of the start preference that we concluded that T was the main order of business, so it is necessary to show that, despite the popularity of an N start in the current data, T had the status of "most important accomplishment."

To a certain extent, the start differences are due to the fact that the confederate caller in Study IA was trying not to lead by never volunteering unsolicited information. Whether non-acquainted clients who are free to lead ever begin by identifying themselves is impossible to say at this point, but it seems implausible. (Note also that the 7 discarded conversations between strangers in the current study never had an N start). In Study IA, A was confronted with a very minimal request since B opened with "I'd like to make an appointment," which specified nothing about preferred times, stylist, or services. Under these conditions, T was the main, and thus, the first order of business. The fact that most of these conversations also had S and O embedded within T tends to support this analysis.

We noted earlier that when callers in the current
study requested an appointment they almost always did more as well by beginning to specify a time, or by asking for a particular operator, etc. Why did they so often establish their identity first? Is there some tactical advantage for the caller or the callee or both in this approach? Conversational efficiency may in fact be improved when B begins with N because N-start conversations tend to have 2 or 3 basic elements rather than 4 (there were 12 four-element N-start conversations and 25 two- or three-element N-start conversations). Perhaps conversationalists take advantage of mutually shared knowledge to reduce what must be explicitly achieved. That is, T cannot ever be eliminated because it lacks stability, but S and O (and sometimes even N) can be dropped if the caller uses a particular opening strategy and if the callee can be relied upon to use what he/she knows and can remember about the caller. If S and O drop out when there is an N start, and if S and O are present mostly in order to facilitate T, N starts are really for the purpose of facilitating T. In this sense they look forward and represent advance planning directed toward the main conversational goal. Preplanning is a very common way of analyzing speech at the sentence level (Clark and Clark, 1977), so it is a natural way of viewing what is happening within a conversation.
Finally, although in the acquaintance data there was no significant preference for S to be the third element (rather than O), there was a trend in that direction. These findings tend to rule out one alternate interpretation of the popularity of S as the third element in Study IA—that O information was largely irrelevant because, although the researcher did not know it, most of those salons were single operator ones so that S was bound to occur more often than O. The acquaintance data were gathered from a salon with four operators, so operator information could not have been irrelevant. Nevertheless, O did not succeed in surpassing S in popularity. Thus, even under the most favorable circumstances it does not become more useful than S.

The overall similarity of the results of Study IA and IIIA reflects, we suggest, the social and organizational problems dealt with in conversations. Conversations were held for the purpose of committing a future period of time to a particular person. This is why Time and Name were seen to be defining accomplishments. Note that this is not simply a matter of allocating time slots, because then the identity of the caller would not figure so importantly. Beauty salons could be, but are not, indifferent to who shows up at what time (as long as not more than one person appeared at once). From the client’s point of view, it is
critical that he/she and no one else get in at a particular time and conversations for getting appointments are sensitive to the co-ordinated cognitive effort that is required to satisfy this social requirement. Services, Operator, and sometimes Name, it has been argued, are present to some extent only because they facilitate the settling of Time. Services is more facilitative than Operator just because of the logic of the organizational system involved. Name is facilitative to the extent that conversational participants can rely on what they know and remember about each other—in other words, social knowledge.

The most obvious appeal to the influence of social factors on conversational structure is the explanation offered for the low obtained frequency of Name embedded in Time. Name was neither solicited nor offered while time negotiations were in progress. Were it to be otherwise, the result would be a violation of a norm that applies to this type of service encounter: neither ask for nor provide favors.
STUDY III

PART B

INTEROBSERVER RELIABILITY SCORES FOR STUDY IIIA

INTRODUCTION

The structural assignments in Study IIIA were supplied by the researcher. Once again, it is necessary to objectify those assignments by obtaining interobserver reliability measures. Slightly modified versions of the procedure and analysis used in Study IB (Interobserver Reliability Scores for Study IA) were used here.

METHOD

A. Observer Training and Data Collection

Thirty percent, or 18, of the original 59 transcripts were randomly selected from Study IIIA and then typed just as they had been transcribed by the researcher (O1). Speaker turns were labeled "A" and "B" and capitalization
conferred a degree of interpretation on the transcripts, but no punctuation was used and no evidence of O1's structural analysis was present. Only the "conversation proper" was presented to O2 for structural assignment, and not the lead-in between B and a callee who subsequently handed B over to the A who actually made the appointment. This set of transcripts provided the data upon which reliability measures were made.

In order to train O2, a separate set of 9 transcripts was created. No member of this set was in the set of 18 referred to above. Six were used to illustrate the modified structural assignment task and three were used to test the effectiveness of the training. Some effort was made in selecting these transcripts to present as much variety as possible in category type and structural assignment. The three test transcripts were presented to O2 in exactly the same format as he would be receiving the random set of 18 that were actually used to compute interobserver reliability measures.

The second observer was the same person who served in that role in Study IB. As before, he had no knowledge of any relevant hypothesis or results.

The written instructions used during training and data
collection are reproduced in Appendix B. They are a revised version of the instructions that were used in Study IB (see Appendix A). The revisions took into account four differences between Study IA and Study IIIA: B in Study IIIA was not the same person across transcripts; A and B are acquainted with each other in Study IIIA; four additional categories were employed in Study IIIA; there is no standardly used appointment request in Study IIIA.

Discussion was encouraged during training, but discouraged when training results were being tested. On the basis of the results of the first three test transcripts, three more test transcripts were provided. Discussion was always kept to a minimum when 02 made structural assignments, but it was encouraged while 01 and 02 reviewed matches and discrepancies.

Observer 2 was then given the set of 18 randomly selected transcripts along with all the training material used for Study IA data and Study IIIA data, and he was asked to make structural assignments to the set of 18 on his own and without 01 being present. As before, no discussion took place between 01 and 02 regarding these structural assignments.
B. Scoring Agreement

The same four levels of possible agreement defined for the Study IB data—form, number, categories, and sequence—were looked at in these data, and each level was considered for "basic" and "non-basic" categories. Thus, there were eight separate measures of interobserver reliability available.

RESULTS

One third, or 6 out of 18 transcripts, yielded complete agreement at the basic plus non-basic level. Thirteen of the 18 transcripts (or 72.2%) matched completely at the basic level.

Basic plus non-basic categories

FORM

Kappa was \( \hat{\kappa} = 0.80 \) (\( p_0 = 0.89, p_c = 0.44 \)), which is significant beyond the .01 level (\( \sigma_k = 0.2 \)).
NUMBER

Pearson's $r$ was 0.81 ($\Sigma xy=441.0, S_x S_y=544$) which is significant at the .01 level.

CATEGORIES

There were 7 conversations for which there was complete agreement about how many categories must be assigned. Within this set, there was complete agreement about the specific value of the categories for 6 conversations. Kappa was 0.83 which is significant at the .01 level ($z = \text{kappa}/0.134$).

SEQUENCE

Among the 6 conversations that matched at the category level, there was complete agreement about category order. Kappa, then, was 1.

Basic categories only

FORM

Kappa was 1.
Pearson's $r$ was 0.78 (\(\Sigma_{xy}=180, \Sigma_x \Sigma_y=230.8\)) which is significant at the .01 level.

Kappa was 1.

Kappa was 1.

On the whole, interobserver agreement was strong enough to conclude that the structural analysis carried out in Study IIIA is objective. Interobserver agreement was somewhat lower than it was for Study IIA. This is to be expected since observations gathered within a restricted and standardized setting typically yield more salient regularities than observations gathered under the noisy conditions encountered in the natural world.
A detailed categorization of observer disagreements revealed no systematic type of dispute. For basic and non-basic elements there were 25 separate disagreements, five of which appear to be the result of O2 not following instructions; six more were the result of O2 calling a turn "residual" that O1 considered to be part of the conversational closing (and so not in need of any assignment). For basic elements considered alone, there were seven separate disagreements, three of which resulted from O2 failing to follow instructions again.
This dissertation was based on an attempt to create and apply a description to the turn-by-turn talking that occurs in very ordinary two-party conversations. The proposed descriptive system is pragmatic since the labelling expressions refer to the interpersonal, subgoal-directed activities in which speakers were engaged. Although some conversations were spontaneous and others were researcher-generated, all of the conversations had the single overall purpose of making an appointment for the services of a hairdresser.

Four major findings across three studies have been reported in detail. They are:

1. A pragmatic description of the conversations collected is meaningful and useful. By starting with a conversation type with a clear overall goal (in this case, appointment-getting), it was possible to apply a small set of subgoal descriptions to all the talking within them. All the talking within the conversations could be sorted exhaustively and exclusively into subgoal-directed activity categories. The classification scheme has some objectivity as was evidenced by high inter-rater reliability measures.
2. These conversations are structured. Regularities in types of sequential structures could be identified in the set of conversations when the subgoal description was applied. That is, it was possible to describe a syntax for these conversations by applying subgoal categories to talking turns.

Specifically, the overall goal-directed activity of making an appointment is comprised of separate lower order subgoal activities. Sometimes (e.g., when embedding occurs) these lower order activities are themselves dependent on the accomplishment of subgoals that take on the role of second level lower order activities. What happens in these conversations is not selected randomly from the totality of events that could conceivably take place in conversations, nor is everything that takes place of equal importance (this was the motivation for the distinction between basic and non-basic elements). There are a minimum number of things that must happen (two: Name Determination and Time Determination) for these conversations to qualify as instances of pursuing a specific goal (getting an appointment with a hairdresser). The sequence in which subgoals occur is not random: the number of observed relations between separate subgoals has been found to be significantly smaller than all possible relations. In
addition, it was possible to make general statements about commonly occurring structures and less commonly occurring ones.

3. People who would reasonably be expected to participate in these conversations possess implicit knowledge about the sequential restraints derivable from a pragmatic analysis. Tentative claims have also been advanced regarding the likely independence of this knowledge from syntactic and semantic knowledge.

4. Similar, but not identical, conversational structures were found in a set of conversations that differed from the first set on the important social variable of degree of acquaintance (or intimacy).

Relating the Data to Pragmatic Principles

The results can be related to the central ideas presented in Chapter I. The main empirical findings in this dissertation are consistent with an interpretation based on the operation of four pragmatic principles that provided a general orientation for the research. Recall that the four principles are (see Chapter I):
1. Speaking meaningfully requires entering into a relationship with another person.

2. (a) Co-ordinated cognitive effort is expended in order to effect an action from the addressee. (b) This is the purpose of speaking.

3. Actions are effected partly by adhering to mutual expectations about how one usually goes about it.

4. Actions can be effected indirectly by relying on what the addressee should reasonably be expected to know.

We consider the results in relation to each of the pragmatic principles.

1. Speaking meaningfully involves entering into a relationship with another person.

Most generally, this means that speakers and addressees take each other into account during speech production and speech comprehension. One must adjust what one says or does, or what one takes the other person to be saying or doing to what one knows or believes about that other's mind--its current mental focus, its computational abilities, its knowledge, its motivational possibilities.

The clearest illustration of this principle in the current findings comes from the comparison that has been
made between conversations involving strangers and conversations involving acquaintances. The difference between doing things implicitly and doing them explicitly has been used to understand some of the structural differences obtained between Study IA and Study IIIA. It was argued that some implicit accomplishments depended on what B could justifiably assume that A knew and could remember about B. This depended on A and B being acquainted. Implicitly accomplished activities ranged from speaker identification to service and operator determination. The notion of "implicitly accomplished activities" reflects one way that the operation of "taking the other person into account" manifests itself.

There are two other less obvious examples of the same forces at work. Consider Study IA and Study IIIA differences from the point of view of "taking sex of the caller into account" and "taking directly demonstrated caller knowledge into account." Virtually every conversation in both studies indicated that the essence of obtaining an appointment for the services of a hairdresser involves the assignment of a time to a person. Characteristically, however, more is done. How much more gets done varied between studies, possibly for the reason that in Study IA the caller was always a female and a stranger. But the second set of 59 conversations between
acquaintances included male and female callers. The sex of the individual has the potential to limit what needs to be explicitly accomplished beyond T and N. Currently in our culture (although one can observe evidence for changing trends here), men do not ordinarily obtain anything more than a haircut when they engage the services of a hairdresser. In fact, among all the conversations with male callers there was only one instance in which A asked what the client wanted ("Do you want streaks?") and if B ever mentioned that he wanted a haircut it was usually as part of an implicit appointment bid (cases where structural elements were assigned within curved parentheses). Women, on the other hand, seek more variety (coloring, blow dry, set, permanents, etc.) and so a group of conversations held with a woman caller (Study IA) is more likely to include the element S than is a group of conversations held with both male and female callers. This is what is seen in the data.

There is one other source (in addition to N) of a low 0 rate in the acquaintance data. It was seen that sometimes a conversation was interrupted and then a second callee came to the phone. In these cases, the second callee never asked who the caller wanted, probably because the second callee assumed it was him/her. The caller has demonstrated knowledge of who the operators in the salon are and he/she
has requested to talk to one of them for the purpose of making an appointment. If the caller wanted the appointment with someone else, there would have been no point in summoning the second callee.

Also, conversational goal pursuit shows sensitivity to the relationship between the participants in the way that it puts limits on the means by which the goal can be achieved. Intimate talk in these conversations occurs only between acquaintances. This is why in Study IA the most "personal" the callee ever became involved discussing the attributes of the caller's name, which was difficult to spell and rather unusual. In the second set of 59 conversations, intimate talk ranged from polite exchanges about "how have you been," to discussions about the death of a client's husband, to jesting about B not having his pants on (A was female). It is interesting to note that Intimate Talk never occurred without B first (and usually adjacently) identifying him/herself, although N often occurred without a subsequent I. Apparently, a prerequisite for "getting personal" is establishing that it is happening under the right circumstances. Related points have been made by Halliday (1978) in his discussion of the effects of "tenor" (role relationship) on semantic patterns and by Brown and Levinson (1978, 1979) in their treatment of the effect of "social distance" on the choice of strategy for
speech act completion.

Acquaintanceship also explains the absence of the "Callee" category in Study IA conversations and its presence in the Study IIIA. A caller would be considered bizarre were she to solicit the identity of someone she did not know. In Study IA, on those occasions in which the confederate caller led (and so the conversation was discarded) there was not a single instance of any talking turn that could be labeled "Callee."

There is reason to believe that the pragmatic structural regularities apparent in these conversations are motivated by, and so are reflective of, the organizational problems the conversations are meant to solve. The problems and solutions have an inherent social component because they involve more than one person. Thus, social variables like politeness, intimacy, acquaintanceship, and familiarity are useful for developing an account of the relationship between conversational pragmatic structure and the real world.

2. The purpose of speaking is to effect an internal or external action on the part of the addressee.

Much of the rationale for this dissertation comes from
showing that a pragmatic description of one variety of conversation is both meaningful and useful. This was discussed earlier on page 174. A few supplementary observations and conclusions can be made.

Since each conversation can be structured using the same assortment of basic elements, it can claimed that whatever has the same overall goal has been found to select subgoals from the same small set. Despite differences in who the conversationalists are (their gender, the strength and precision of their preferences, their native culture, their conversational priorities, etc.), in how well conversationalists know each other, and (partly for that reason) in the precise tactics they they use to accomplish appointment completion, they find themselves doing the same things. In particular, they find themselves usually doing more than the same essential things (T and N). This is important for the reason that conversational participants within and across studies certainly do not say the same things (i.e., emit the same words in the same order or even different words with the same "meaning"). These conversations are the same at two levels of action: overall goal and component subgoals.

A related claim was that speaking purposes have psychological reality: they can be shown to be attributed
to speakers by their addressees, and purposes can be shown to figure in addressees' interpretations of what was said. The data here are only incidental and they are not as systematic as Clark's (1979), but they are worth mentioning. It has been maintained that there is a difference between the implicit and explicit achievement of making an appointment bid, of conveying one's identity, and of conveying one's desires. What is achieved implicitly (or indirectly) relies on the knowledge one supposes the other has of you. Examples of implicit appointment bids taken from the acquaintance data illustrate this. "Taking things out of context" of what is being done could create odd situations:

1. I need a haircut

2. I was wondering if Ellen could take me this afternoon

3. Do you have any time around 4:30

4. I think I might be able to get a lift somewhere between ah twelve I think if I can Will you have a li a free space

5. Are you going to be available this afternoon
One is not tempted to imagine someone saying "so what?" in reply to (1) or "take you where?" to (2) or "time for what?" to (3). These work as appointment bids for the reason that A knows what B is likely to be trying to do. Each of these turns except (4) occurred after B had identified him/herself. That (4) was even interpretable by A is remarkable. (5) is from a male client speaking to a female callee. One possible misinterpretation, which depends on the attribution of quite a different motive than the one intended, would create a classic double entendre.

Speaking has a purpose and that purpose is to do something. One interpretation of Clark's (1979) findings on the conventionality of linguistic form was that subjects know about the relationship between linguistic means and ends (how to do what you want to do) at the sentence level. For instance, what conversationalists knew about in that study could be paraphrased as, "if you want to issue a request, use these words in this order." The same thing characterizes what conversationalists know about making hairdresser appointments, but at the level of subordinate goals in the service of superordinate ones. The principle here is: "if you want to make an appointment, here is how to proceed--do this first (e.g., Time) then do this
(e.g., Name), and avoid certain sequences of events. If you want to settle on a time, either begin and complete it all at once, or begin it, finish services determination, then close it." There is a hierarchical arrangement of "what I want to do" and "how I can go about getting it." Lowest down are the articulatory gestures that create the sounds that words are. Highest up are the mundane and esoteric plans that human beings formulate in an effort to order their lives.

Finally, it should be noted that the ethnomethodologists generally (Sacks, Schegloff, & Jefferson, 1974; Schegloff, 1968; Schegloff and Sacks, 1973), and Merritt (1976) in particular, maintain that speakers cannot by themselves effect an action. Purposes are complementary and goals need to be pursued via a process of co-operative negotiation. Whole conversations provide clear examples at the level of overall conversational goal. However, neither the current data nor the type of analysis applied to them allows firm conclusions regarding lower level goals. Nevertheless, there is some reason to believe that at least some of the time more than one speaker turn, and so more than a single participant, is required to bring particular happenings to a close. The clear case in the data reported on here is Time. Whenever embedding occurs, Time is not completed
until the other speaker has participated. Instances in which Services and/or Operator are completed before Time begins are open to the same interpretation under the account that was given earlier for the functional significance of this pattern, but the conclusion involves several assumptions.

3. Co-ordinated cognitive effort is expended by speakers and addressees in their pursuit of speaking goals.

Role taking ("seeing things from the other person's point of view"), unconscious reasoning ("if he is speaking sincerely, then this must be what he meant"), and assessment of mutual knowledge were used earlier to define the dimensions of this process. On this view, conversationalists apply Grice's Co-operative Principle conscientiously to make appropriate compensating adjustments to what is said in order to work back to what was really intended. Compared with the amount of research that will be required to explicate what is meant by "co-operative cognitive effort," the present findings are relatively modest. They are concerned exclusively with demonstrations of the use of mutual knowledge. As such, they are best discussed under the next two headings (but see also the discussion in [1] above concerning a source of a low O rate).
4. Mutual expectations about how to effect actions in speaking facilitate the achievement of those actions.

Three claims underlie this principle; namely, A knows something and B knows the same thing, they both know or believe that the other knows it, and this knowledge allows each to anticipate what will happen next. The last aids comprehension. (See Power [1985] for a discussion of how mutual intention, which is present during the pursuit of conversational goals like appointment making, and mutual knowledge can be adequately described, and possibly represented mentally.) The current findings support only the claim that B (the caller) knows how to do something: get a hairdresser appointment. She knows what subordinate actions need to be carried out and in what sequence. It seems likely that A must also know the same thing, but the evidence is indirect. The conversations used in Study IIA, where B’s knowledge was demonstrated, were cases in which only A led. This characterizes the Study IA conversations that supplied the material receiving naturalness ratings in Study IIA. If A dictated the pragmatic regularities that B knows about, it is difficult to see how she/he could have done this without relying on a stored representation—knowledge. What is highly routine is very likely to be a product of a mental structure that can
account for the observed regularities.

5. Speaking actions can be effected indirectly by relying on what the addressee can reasonably be expected to know.

This point was introduced in the discussion of the effect of familiarity and knowledge of the other as this relates to "entering into a relationship." Also, the knowledge one has about the speaker’s probable purpose in talking has been used to explain why indirect requests for appointments work. The fourth point also referred to knowledge about the goal structure of specific types of conversation. Some of this knowledge that aids linguistic communication is social.

There may be two varieties of social knowledge possessed by both caller and callee, and evidenced in the conversations that have been examined. One is characterized as "what everyone knows." It is likely acquired in a process of generalization from relevant specific interactions with many different people. The other is "what only some (acquainted) people know," and it is likely the result of relevant specific interactions with a particular other person. In the first category would be inductive conclusions such as "every successfully made appointment
will involve reaching (at least) a mutual agreement about who exactly will be accommodated at what precise beginning time in the future." Another might be: "some achievements (T) will likely depend on the prior accomplishment of other things (like S and O, but not N) but other achievements (N, S, O) probably will not." Other generalizations do not seem quite so bound to the conversational process: "men and women differ regarding services they are likely to want;" "do not be intimate with people with whom you are not acquainted." This last accounts for the lack of "Intimate Talk" in Study IA and its necessary inclusion in Study IIIA.

Acquaintances know things such as which services and operators clients are likely to want. Clients themselves probably rely on what they know about opening hours and operator availability (not all operators work all six days a week) in making their initial time request. Acquaintances can be expected also to identify each other. Identification takes place either because the name is explicitly made known or because there is enough other information available for the identifier to make an accurate guess. This happens in both directions--A can identify B, and B can identify A (which necessitated the "Callee" category in Study IIIA).
Generalizability

Three questions relevant to the issue of generalizability of our results can be raised. The first concerns what Study IA and Study IIIA results have in common. The second considers a new interpretation of the difficulties encountered in Study IB. The last raises some important questions about the extendability of the pragmatic structural analysis that has served well in the development of the present research.

One of the findings in the Study IIIA data is that structure exists within this group of conversations despite critical departures from the constraints adhered to in Study IA—constraints that favored the discovery of structure, should any exist. In that first study the parties were strangers—a feature that should have made idiosyncratic approaches to appointment-making relatively rare. In the fifth study (IIIA), idiosyncratic strategies, which would have an opportunity to develop over the series of interactions that characterizes acquaintanceship, were given an opportunity to be used. In spite of this increased variability, structure related to that found in Study IA emerged. As well, the first set of 93 conversations was the result of screening out any that involved non-native
speakers of North American English. The final set of 59 included non-native speaker callers as well as callees. One can conclude either that the type of pragmatic structure investigated is indifferent to cultural variation or that speakers who are relatively incompetent syntactically and semantically in English are nonetheless pragmatically quite expert.

Another screening criterion used in the first study (IA) but not in the fifth one was "caller leading." That is, if the confederate caller was judged by an independent third party to have led the conversation at any point, the conversation was discarded. This restriction was put into effect originally because caller-generated structure was obviously not of any interest within a quasi-naturalistic research setting. But consider the complexity of the circumstances under which the second set of 59 conversations was collected: potentially either party could open or close any subgoal and whoever had not taken the lead to open or close had the choice of co-operating or not co-operating with whoever did take the lead. Insofar as there are structural regularities that resemble the ones found earlier, they are all the more impressive for having arisen from the co-ordinated activities of two interacting generative sources rather than from a single one that could rely on the complete co-operation of the caller. We suggest
that these results indicate that subgoal regularity is not only a robust phenomenon, but also that it is achieved in flexible ways.

Furthermore, even in the presence of detrimental contextual factors (familiarity, two leading sources, non-native speakers) it is found that subgoals are achieved in orderly ways. Although there are systematic differences between preferred orderly ways (linear vs. non-linear), at a higher level of abstraction there is a preference for the same broad means of achieving the same thing (i.e., "close S and O before T closes"). As well, some possible orderly sequences are mostly avoided for what seem to be fairly general reasons having to do with politeness, expertise, and unrealisable subgoal contingencies.

Certain limitations of Study IA imposed in the interests of control might have served to restrict the generality of the findings. However, the data gathered in Study IIIA serve to reduce the number of potential problems. For instance, the caller in Study IA was a confederate and so her goal of getting an appointment was only apparent or at best, only in the service of a higher order goal, which was something like "co-operate with the researcher." Since she had no intention of actually keeping the appointment (and so to a certain degree she was
indifferent to the appointment time settled upon in the conversation), and since she did not actually desire the services she was told to specify, it could be argued that the generalities coming out of Study IA do not apply to real conversations between two parties, both of whom normally enter the interaction with genuine first order overall purposes, real commitments to future actions, and specific everyday constraints on what is negotiable and what is not. When the caller found a time offer acceptable, could she really have kept the appointment or was she simply trying to get the conversation over with because she knew she had to make several more phone calls that day to satisfy the researcher? If a time offer was not acceptable to her, was she being arbitrarily difficult to please or was the time actually inconvenient for her?

A related point concerns the possible artificiality of a generation procedure that involves asking a single caller to do repeatedly within an hour what normally would be done repeatedly within a space of months or years. As well, it is critical, if one is to claim that conversational structure exists, that the structure in that first study (IA) be generated by the naive callee (A) and not the confederate caller (B). Although in the researcher's judgment the caller did not lead in Study IA, this is a subjective assessment. The conversations in Study IIIA are
less likely to suffer from researcher-imposed effects.

Even assuming that B did not lead and that apparent goals support the same structural regularities as genuine goals, there is one other interpretive restriction within Study IA that is circumvented with the type of collection procedure employed in Study IIIA. The generalizations that emerged in Study IA apply across many and diverse salons, (and so, callees) since the caller (B) was a constant factor. Additionally, we have described regularities that hold across a diverse set of callers when the callee is held relatively constant. To the extent that callers may be assumed to lead in this additional set of conversations, structural regularities may be attributed then to both conversational parties.

From another perspective, Study IIIA results might seem to question the generalizability of the conclusions coming out of Study IA. Less than ten percent (8.9%) of the collected conversations in Study IIIA were between strangers, so Study IA apparently failed to collect anything representative of the real conversational world. Moreover, 8 of the original 78 Study IIIA conversations were difficult to structure, yet this was not the case for any of the Study IA conversations. Two of those recalcitrant eight involved strangers, so conversations
between strangers are disproportionately represented in the difficult group. The question arises: were the conversations in Study IA amenable to structural assignments that yielded very high interobserver reliability scores simply because they were "contrived"?

So far as the criticism that conversations between strangers are unusual is concerned, it should be kept in mind that the Study IIIA data were collected from only one salon that was *not* randomly selected from the Vancouver beauty salons that provided the data in Study IA. It is situated in a local shopping area that serves a small "community" within the city, and the community itself occupies, geographically, a relatively isolated part of the city. For that reason, it is highly likely that it does a large volume "regulars" trade. Even if less than ten percent of all appointment-making telephone calls are between strangers for beauty salons *in general*, the results of the fifth study (IIIA), which excludes strangers, sufficiently resemble the results of the first study (IA) to allow for the formulation of some abstract principles that are independent of the acquaintance/non-acquaintance dimension. Likewise, it is possible to attribute in a speculative way some areas of genuine non-resemblance across the two studies to the contextual and methodological differences between them.
Finally, saying that certain structural assignments were made to conversations with confidence is clearly subjective. It is always worth reviewing the attributes of the data one discards. Keep in mind that although 25% (2 out of 8) of the difficult-to-structure discards were between strangers, 75% (100% - 25%) were between acquaintances and 71% (5 out of 7) of conversations between strangers were not difficult to structure. Any naturalistic study is bound to unearth data that are messy compared with what is garnered under even the minimal methodological constraints incorporated in Study IA. "Real" stranger data are not much messier than "real" acquaintance data (90% of the acquaintance data were not difficult to structure compared with 71% of the stranger data). It is doubtful that the fact that Study IA data were "clean" necessarily means that they were contrived or artifactual.

Turning to the next issue, focusing on the possibility that conversations between strangers may be relatively unusual, directs us to an alternative explanation of the inability of subjects to restructure scrambled conversations in Study IB. If they assumed that the conversations were "usual" ones, they might have then assumed that they were between acquaintances. In fact, they were between strangers. This would explain why they avoided
embedded structures and created what is most common between acquaintances—linear structures. This factor may have operated together with the motivational one discussed before to insure that the naturally occurring conversation was never generated and evaluated as to "goodness."

The third broad concern that needs to be dealt with here is the question of the generalizability of findings based on what is admittedly a restricted example of human conversation. In what follows, an attempt is made to define and place in perspective the dimensions along which problems of this nature might be expected to lie.

(a) The present data involve two-party exchanges. Obviously, multi-party conversations also occur. How extendable in this direction should the findings be expected to be? Not being able to generalize to multi-party conversations hardly detracts from any understanding gained about two-party conversations. Even if the limitation turns out to exist—and it may not—it does not detract from the importance of what has been discovered.

(b) Face-to-face conversations, which these are not, utilize more than one sensory channel and there is the possibility that the extra information thereby conveyed is not simply supplementary to auditory information, but is
Indispensable in determining what is recovered during comprehension (as when a well-placed wink indicates that everything that is being said is not meant to be taken seriously). We know, however, that extra-auditory information is not necessary in a conversation since people hold conversations successfully on telephones, through walls, and over walkie-talkies and radios. Conversations at a distance might be different in important ways from face-to-face encounters, but they are not rare. Besides, since we currently have no assessment of the role that facial expressions and hand gestures play in comprehension, they must either be eliminated or included with equal energy devoted toward understanding their operation.

(c) Pragmatic conversational analysis and tests for knowledge of conversational structure were performed over a restricted period of time. Language and knowledge of it are subject to change, so that the present results may not be obtainable later on. In opposition to this view, we note that the most general findings appear to be attributable to the operation of organizational and social variables, some of which are not likely to undergo significant modification over time. Thus, it is likely that the most general findings will be obtainable in the future. For example, the essence of obtaining an appointment will likely always involve assigning a time \((T)\) to a person \((N)\). Of course,
certain factors will change (for example, the types of services men request of hairdressers) and this should be reflected in how many subgoals one finds in conversations with male clients.

(d) What is true about comprehension of conversations held for one purpose need not necessarily be true of conversations held for different purposes.

This could become a troublesome objection. However, it is a researchable issue and it is reasonable to claim, given the strength of the current findings, that a subgoal analysis of conversation has much to recommend. Certain abstract principles that apply to comprehension from a particular starting point may very well turn out to be exportable to conversations with different overall purposes. Many everyday conversations, like the variety investigated here, can probably be assigned the functional label of "for the purpose of removing obstacles to the smooth and effective completion of intended future action." Making various sorts of appointments and reservations falls in this category, as do some instances of obtaining information.

As an illustration, consider what happens when an appointment is made (as with the doctor, plumber, car
mechanic, etc.): the caller must obtain a commitment from the other party to make the callee's (or someone else's) services available at some specific future date and time that are mutually convenient. The commitment is probably reciprocal at least some of the time since broken appointments may lead to a "fine." Depending on the type of appointment, certain aspects of the commitment may be negotiable and others may not be—who the appointment is for is usually not negotiable for doctor appointments but it may be for service calls by plumbers (in the researcher's personal experience all that is required is that someone--anyone--be home at the negotiated time); times generally speaking are probably always negotiable within limits.

If these intuitions are correct, making doctor appointments ought to have something in common with making hairdresser appointments and making appointments ought to have something in common with making reservations (for objects and places), since all of these conversations are held for the purpose of removing obstacles to future intended action. If so, generalizations about the pragmatic structure of appointments should be applicable to the pragmatic structure of conversations for reservations. The most ambitious prediction would be that some generalities obtained will be applicable to all types of conversations.
when the appropriate level of abstraction is isolated. Those generalities would likely take the following form: all or most conversations can be described in terms of subgoals, the subgoals are not infinite or even very large in number, nor is the way that they are related to each other equal to all calculable possibilities. Underneath the superficial diversity of words, propositions, speech acts, and adjacency pairs that characterize conversations held for a particular purpose, there will emerge a restricted set of subgoals related to each other in formally specifiable ways. Conversations held for the purpose of persuading or complaining, for instance, will also be outwardly diverse, but they should be resolvable into a set of related subgoals; some will be the same and some will be different from the subgoals describable for conversations for getting appointments and reservations.

Some preliminary data support the view being espoused here. The following three recorded telephone conversations are spontaneous. In each case B knew that a recording was being made but A did not. The first is between acquaintances, and the other two are between strangers. The first is B’s successful attempt to book a film. The second is an example of obtaining an appointment for a car repair. The third is an instance of making a doctor’s appointment. Names and other identifying information have been changed
to maintain anonymity.

A. Media Library Irene speaking
N
B. Yes Irene This is Alice Worth
A. Unhuh
STO
B. Uhm I would like to book the memory film for next Monday if it's available
A. Okay Just hold the line and I'll check it for you
B. Okay Thanks
A. Next Monday the fourteenth
B. Unhuh
TC
A. Is fine
B. Oh good
A. Okay
B. Thank you very much
A. Bye bye
B. Bye bye

A. Morning Ace Toyota
B. Ah Could I have the service department please
A. Unhuh

TOSO
B. Ah yeah Could I get a Saturday appointment for an eighth month for an eight month check up on my Celica
SC
A. Okay What time
B. Ah Is noon okay
A. 'Bout one o'clock
B. Ah One o'clock's better for you
A. Yeah Then the guy's at lunch from twelve to one
TC
B. Oh Okay
NO
A. The name?
B. It's Goff G-O-F-F
NC
A. Okay
B. Thanks very much
A. Thank you
B. Bye
A. Bye bye
A. Breach Medical
B. Yes I'd like to make an appointment to see Dr. Spooner I'm a patient of hers.

A. Okay What were you coming for
B. I want to talk to her about starting the process of getting a tonsillectomy and also and I want to discuss with her some other problems I could be having since

Okay

A. Thursday at ten thirty
B. Oh perfect

A. And your name
B. Ah Muriel Sterm S-T-E-R-M

A. And your phone number Muriel
B. Uhm Ah Home is 926-4359
A. Unhuh
B. Do you want work

A. No That's fine
B. Okay

A. Okay So ten thirty on Thursday
B. Good Thank you very much
A. Good bye

B. Bye bye

The talking turns lend themselves to assignments identical to the ones developed in the research based on hairdresser appointments. The structural assignments are as follows, and they are similar to what one commonly sees among conversations for getting hairdresser appointments.

NST

TOSTCN

OSTNphoneTconfir.
(e) It is relatively easy to refer to overall conversational purpose when a summons-answer sequence (as when the phone rings, the callee says "hello", etc.) initiates the conversation and a voluntary channel break (hanging up) closes it, but this may not be so for cases where people find themselves in each other's company for a purpose other than conversing or for no purpose at all—for example, at the dinner table, in front of the T.V., or on a bus.

It is difficult to imagine a phone caller not having a purpose and the called party coming up with a complementary one if the callee does not quickly refuse to participate. But attributing purposes to chance acquaintances seems more a case of "Well they are talking so they must have a purpose." Of course, it might prove an error to attribute purpose to either casual or deliberate conversations, and even if the second type is usefully analyzed according to subgoals, the first may not be. This lack of generality is not particularly bothersome for the following reasons. First, casual and deliberate conversations are probably different because their termination will be decided in the first case by extra-conversational factors (dinner coming to a close, the plane trip ending, the bus stop being reached, etc.) and in the second case by "business" having been completed. Second, casual conversations, if they have
goals at all, probably have essentially different ones—establishment of social contact, friendliness, reaffirmation of intimacy, and so on, as opposed to gaining information, arranging for services, and complaining, wherein the other's feelings may be taken into account, but they do not constitute what the conversation is directed toward maintaining or changing. One could say that casual conversations focus on what Jakobson has called the *phatic* function of speech (Jakobson, 1960) rather than what is termed its *performative* function (Austin, 1975). (Goffman [1971, 1976] would distinguish between the *ritual* work that speech does and the *deed* it performs. Brown and Levinson [1978] discuss phatic functions under the term *face wants.*) Lack of generality is not troublesome here since no model should be able to explain everything, although its limits should be set by reasonable distinctions. Telephone conversations have well defined beginnings and endings, which often can not be said about casual conversations. Telephone conversations with deliberate purposes signalled by voluntary beginnings and endings confer a research advantage because they represent natural units of "business." As such, they are more likely to display pragmatic structure compared to a conversation that is either open-ended, or not "business-oriented," or terminated by "non-business" factors.
(f) Conversations in which one is aware of whether or not one's intended purpose is being accomplished may be different from those in which this monitoring does not take place.

This is not a serious drawback. Rehearsed, over-prepared, and emotionally charged experiences typically result in what seems introspectively like an exercise in divided attention. Increased complexity and variability in conversational structure would be expected, so that conversations characterized by self-awareness are likely to be less research-transparent than those that are not, but they will not necessarily be structurally different.

(g) Conversationalists are not typically interested in efficiency to the degree that they are in conversations for making appointments—in getting the job done quickly and smoothly—and it is not unreasonable to say that no conversation is engaged in repeatedly since even every hairdresser appointment is unique in the sense that what is done is different each time. (Getting an appointment for four o’clock on Tuesday at Donna’s Beauty Salon is doing something different from getting a two o’clock Friday appointment at the Beauty Barn.) While the first point is a researchable one, it is not any more obvious a fact than
its opposite. The second point is an apparent philosophical muddle that can be dismissed on the grounds that the conversations investigated in these studies have been shown to share many things in common.

In conclusion, we have argued that what is two-party, highly routine, and single-purposed is not likely to turn out to be different in kind at some appropriate level of abstraction from what is more variable (and so, more research-opaque) or differently goal-oriented.

**Future Research Directions**

There are six areas that readily lend themselves to additional research. Some are best viewed as extensions of what has been shown to be a heuristically sound approach to understanding language. Others are included because they are meant to fill gaps where converging supporting evidence is desirable or because controls for alternative interpretations are warranted.

1. The results of Study IIB and their interpretation in terms of conversational structural knowledge are reasonable in the context of how one is permitted to draw conclusions about the contents of mind within cognitive
psychology. Nevertheless, it would be comforting to be able to draw the same conclusions from a variety of different studies employing separate measures, all of them designed to engage that knowledge. Before attributing to human beings yet one more thing that they know, it behooves the theorist to make as general a case as possible by exploring several operationally defined avenues of potential agreement.

2. The single most speculative interpretation of the data reported here is the reference to social knowledge rather than to knowledge about pragmatic conversational structure—what everyone knows about everyone else, and what only some acquainted people know about each other. This knowledge provided an explanation for systematic structural differences between the conversations in Study IA and those in Study IIIA. It also motivated the distinction between doing things directly and doing them indirectly. Support for the idea that people attribute speaking goals to other people and that they use these presumed goals in order to interpret what speakers intend also assumes the existence of this social knowledge.

The data are consistent with this interpretation, but it is questionable whether they require it to the exclusion of other interpretations. The problem is one of lack of
control. More than acquaintanceship varied between Study IA and Study IIIA and the consequent confounding variables create a situation in need of remedy. For instance, the confederate was the caller in Study IA, whereas, the callee was the confederate in Study IIIA. Structure was almost certainly attributable to the callee in Study IA because the confederate caller did not lead, but structure might have arisen artifactually from the confederate callee in Study IIIA, since the callee knew that a recording was being made. Another difficulty is that the generalizations about structure in Study IA were made over a variety of salons, but the generalizations in Study IIIA were representative of only one salon. It might be that the Study IIIA salon was generating data identical to data generated by a subset of Study IA salons, and independently of the acquaintance variable.

In summary, the interpretations advanced should be considered reasonable but preliminary. The supplementary research required in this case would be either a series of quasi-naturalistic observational studies like the ones performed here, designed to eliminate confounding variables, or more tightly controlled research like laboratory or field experiments.

3. One natural extension of this dissertation would be
an application of a pragmatic structural analysis to other "linguistic objects" that are not two-party telephone conversations. It was argued in Chapter I that forms of language such as text, monologue, lectures, etc., are less basic than conversations of which they are derivative. Conversations were introduced as appropriate research objects because they were assumed to display most blatantly that which all other linguistic objects also possess but less obviously--pragmatic structure. It ought to be possible then, to subject stories or public speeches or the content of textbooks to a subgoal analysis and find structural regularities. Less ambitiously, it ought to be possible to apply the analysis developed in this dissertation to making appointments with hairdressers when the activity is face-to-face or in writing.

4. Another area where successful extensions are predicted is among other types of two-party conversations. This was discussed earlier under the topic of Generalizability. Conversations with overall goals similar to the one of getting hairdresser appointments should be analyzable into similar or identical subgoals and they should display similar or identical structural regularities. The more distant one conversational goal is from another, the less overlap one would expect in subgoals and structural regularities. For instance, making
restaurant reservations is probably more similar to making hairdresser appointments than it is to making a catalogue order, and the pragmatic analysis should reflect this.

5. In order not to lose sight of the primary motivation of this body of research, it is necessary to return again to the topic of knowledge— in this case, the subgoal structural knowledge for which some direct evidence has been amassed. Understanding language comprehension is the main interest of this dissertation. What has been demonstrated so far is only that conversationalists possess a particular kind of knowledge that is only broadly speaking, linguistic; to date this has not been described. The critical next step is to show that this knowledge is utilized in the comprehension process. It may play the same role that has been attributed to structures like schemata or scripts (Minsky, 1975; Rumelhart, 1977; Schank and Abelson, 1977)— one of supporting inferences and creating expectations. Beyond that, in order to create a reasonably integrated psycholinguistic theory, it will be necessary to examine how it is represented, how it is related to other sorts of linguistic and non-linguist knowledge, and what types of processing restrictions apply to it. These topics form the basis of models of intelligent human behavior within cognitive psychology.
6. In a sense, the pragmatic description that has been found to be applicable to conversations of a certain variety, and to the knowledge that conversationalists have, is probably only superficial. If conversations are related to each other by virtue of participating in the achievement of similar abstract goals, the relation is unlikely to become apparent unless "deeper" or more abstract descriptions of conversational happenings are developed. These deeper descriptions and the structural regularities they support are likely to depend on the social/organizational factors referred to earlier. For instance, making restaurant reservations seems similar to making hairdresser appointments, since they are both instances of "removing obstacles to the smooth flow of future action." Yet, if we were to apply the "superficial" category descriptions to real reservation conversations nothing analogous to "Operator" or "Services" would ever appear. Who will serve you and what you will eat are usually irrelevant to the making of restaurant reservations.

However, if we return to what was claimed about the functional significance of S and O--why they "really" occur--their absence in reservation conversations is understandable. S and O probably are present partly to satisfy the client's preferences, but if that were all,
they need not be determined in advance of the appointment actually taking place. The client could show up, ask for Irma, and get her to do a perm. They are dealt with in advance because the main problem these conversations solve is one of allocating blocks of future time with no overlaps, and possibly with as few unfilled isolated gaps as possible. Restauranteurs do not allocate resources in quite the same manner, partly because one does not commonly get a choice of waiter/waitress, and people usually take about the same amount of time to finish a meal. Notice, however, that customers are often asked what time they want the meal and how many people are in the party (this last determines the size of table required—the amount of space that will be taken up). Occasionally, the customer is told that if the customer does not take more than an hour the customer can get the reservation, but that the table must be free in no more than an hour. Removing the obstacles in these conversations makes "number in the party" analogous to "Services" in the appointment conversations.

Consider two additional illustrations of "deep" descriptions in hairdresser appointment conversations. When one reflects upon what might happen if the client did not show up or if the salon closed down for lunch at the previously agreed upon appointment time, it is clear that "Time closing" involves many subgoals and commitments. The
caller and callee have committed themselves to complementary future actions at the point where TC occurs. A has agreed to provide a particular service to B at a particular time and B has agreed to be on hand to receive it at that time. Violations often carry penalties. Some service providers (dentists, for instance) will charge a client for a missed appointment, and they have been known to print threats to this effect on their cards. On the other hand, the only sanction the ill-treated client can bring to bear in this type of situation is to avoid patronizing the offending establishment.

Concerning the underlying function of "confirming" activities like "time confirm," "operator confirm," etc., it is difficult to say exactly what they might be. Sometimes they appear to be polite closing initiators ("the caller must be satisfied, so let us show her that by making absolutely certain everything is in order"). But, at other times, they seem to earnestly solicit revisions or corrections from the other side, as though A cannot quite remember what was settled on. This is especially true of "Name confirm" in Study IIIA. In any case, saying that confirmation is taking place does not go far enough. We need to know the point of engaging in this particular activity.
Finally, it should be noted that all of the research reported here contributes most generally to a growing concern with pragmatics within psychology that goes beyond efforts to explain conversational comprehension. For instance, language acquisition explored by researchers such as Snow (1979), Shatz and Gelman (1973), and Bruner (1983, 1974-1975) has been shown to be reliant on what Bruner calls "action dialogue" wherein the child strives to effect actions from others using means that will ultimately adhere to social convention (syntax and semantics); adults (and children talking to other children) adjust what they say to what the other can reasonably be expected to know in order that the acquisition process may take place. The mechanism itself could be termed "pragmatic," and the developmental change that takes place is, broadly speaking, social.

Another example comes from Sanford and Garrod (1981) who are concerned with discourse comprehension. They systematize much of the theorizing and experimentation that has been carried out within the information processing view of human knowledge from a perspective that centralizes the notion of the writer entering a contract with the reader for the purpose of establishing in the reader's mind a "situational model" closely resembling the one in the writer's own mind; this suggests that a Gricean co-operative principle is operating during text
comprehension. This is an avenue the authors do not explore explicitly, but it is not at odds with their account. Additionally, a variety of researchers working within diverse social psychological areas—such as the therapeutic interview (Labov and Fanshel, 1977), attribution theory (Turnbull and Slugoski, 1987, Turnbull, 1986), person perception (Holtgraves, 1986), and sentence interpretation (Slugoski and Turnbull, 1986)—have provided evidence for the importance of the interplay between pragmatic variables like literal meaning, indirect meaning, mutual knowledge, intimacy, face, and status for models of cognition. This diverse activity points to the ever-growing impact of the pragmatic perspective in the psychology of language. It is hoped that this dissertation has made a small contribution to psychological pragmatics.
INTEROBSERVER RELIABILITY TRAINING INSTRUCTIONS

Your job will be to take typed transcriptions of tape recorded telephone conversations, and one by one, to analyze what is said within each conversation in terms of what is happening at each point. This is really relatively easy to do if you pay some attention to the guidelines and examples that follow.

All the conversations are between a single person called 'B' in the transcripts and a variety of different individuals, all labelled 'A'. 'B' is phoning various beauty salons in order to get an appointment for a haircut, so 'A' in all the transcriptions is a receptionist in a beauty salon who has answered the phone.

Everything that happens within these conversations can be assigned one of sixteen basic categories. Turn the page, and you will see definitions of each category along with symbols for them which can be used when you analyze the transcriptions. The definitions are fairly abstract, but they will make a lot more sense when you see how to apply
them to actual conversations.

Here are the categories along with their symbols. Each one when applied to the transcripts is more specifically designated as "opening," "ongoing," or "closing," so that, for instance, the category "time" is really three separate categories: "time opening," "time ongoing," "time close."
T 1. Time: either party is engaging in activities directed toward establishing a mutually agreed-upon time for the appointment.

O 2. Operator Determination: either party is engaged in activities directed toward establishing a mutual understanding about the caller's preference for an operator.

S 3. Services: either party is engaged in activities directed toward establishing a mutual understanding about what the caller wants to have done during the appointment.

N 4. Name: either party is engaged in activities directed toward establishing a mutual understanding about the identity of the caller.

O assig. 5. Operator assignment: either party is engaged in activities directed toward establishing a mutual understanding about the operator the caller will have for her appointment. This covers both situations where offers are made and accepted and where no offers are made.

T conf. 6. Time confirm: either party is engaged in activities directed toward establishing a mutual understanding about the mutually agreed upon time for the
appointment. This category can be used only after the "time" category has been applied to a turn or turns. The purpose of confirming time can be anything.

O conf. 7. Operator confirm: This in analogous to the "Time confirm," but concerns the operator.

S conf. 8. Services confirm: again, it is analogous to "Time confirm."

R 9. Referral: either party is engaged in activities directed toward establishing a mutual understanding about why the caller decided to attempt to get an appointment with this salon specifically. The activity is directed toward answering the implicit "why us?". It is a co-operative effort at creating a justification for the telephone call and its purpose.

P 10. Previous visits: either party is engaged in activities directed toward establishing a mutual understanding about whether or not the caller has been to the salon before.
state 11. State of hair: either party is engaged in activities directed toward establishing a mutual understanding about the current condition of the caller’s hair.

Tel 12. Telephone: either party is engaged in activities directed toward establishing a mutual understanding about the caller’s telephone number.

L 13. Location: either party is engaged in activities directed toward establishing a mutual understanding about where the salon is located.

Pr 14. Price: either party is engaged in activities directed toward establishing a mutual understanding about the cost of the services the caller desires.

S supp. 15. Service supports: either party is engaged in activities directed toward establishing a mutual understanding about what sort of props (usually pictures) are useful in providing services to the caller.


Categories numbered 1 through 6 will be used relatively frequently, the others less frequently.
Every transcription is composed of 'A' and 'B' alternating their speaking—they take turns, as it were. What I want you to do is to decide at what point something specific like establishing a mutually agreed upon time (the Time category) has begun, and then also where it has ended. We can symbolize time beginning by $T^O$ and time ending by $T^C$ (time opening and time closing). Similarly, you would indicate that one of the parties had begun to try to find out what the caller wanted to have done during the appointment with $S^O$, and once that particular activity was finished you would assign a $S^C$.

I'm really interested only in when things open and close. Of course, there will be conversations in which a single event like Time takes place over several speaking turns before it closes. As long as a single happening is ongoing you needn't worry about indicating that fact, but as soon as something else as defined by the sixteen categories occurs you must make note of that. Also, you must be able, at least mentally, to categorize all the speaking within each turn into one of the sixteen categories, except for the very beginning and the end of each conversation as explained below.

Here's an example of the application of four
categories--Time, Services, Name, and Residual--to a transcribed conversation. The speaking turns are numbered here, but they won’t be when you actually do your analysis. The numbers simply make it easier for me to explain what’s going on.

1 A. Good morning Al's Coiffures
2 B. Yes I'd like to make an appointment
3 A. Ah For what day
4 B. Saturday morning please
5 A. Ah What time would you like that
6 B. About ten
7 A. Okay What's that for
8 B. Cut shampoo and a blow dry please
9 A. Okay And your name please
10 B. Mcrae M-C-R-A-E
11 A. M-C
12 B. R-A-E
13 A. Okay We'll see you then
14 B. Thank you
15 A. Bye bye
16 B. Bye
Here are a few points that will help to explain what's important in this analysis and what's not:

1. I'm not interested in the opening and closing remarks and for this reason you can almost always ignore the first two turns. (B's first remark will always be "Yes I'd like to make an appointment", by the way.) Likewise, turns 14-16 are of no interest in this particular conversation and needn't be categorized.

2. I'm more interested in the sequence of what happens than in your ability to decide exactly in which turn it happened. For instance, you may have decided that Services closes in number 8, and I've placed that closing in number 9, but the discrepancy doesn't really matter since we both agree that $S^0$ occurred, then $S^C$ occurred, then $N^0$ occurred.

3. In the end, I want you to assign a set of symbols to each transcribed conversation, keeping in mind that it's the sequence of what's happening that matters. The above conversation would be assigned $\text{TSNRes}$. Notice that this uses a sort of abbreviation because I've left off the superscript o's and c's. Do this whenever a particular happening opens and then closes without any other different
happening intervening. Otherwise you will need to use superscripts as the next example illustrates:

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Good morning New Wave</td>
</tr>
<tr>
<td>O²</td>
<td>Yes I’d like to make an appointment</td>
</tr>
<tr>
<td>O²T⁰</td>
<td>Okay Who’d you like it with</td>
</tr>
<tr>
<td>O²T⁰</td>
<td>I’ve never been there before</td>
</tr>
<tr>
<td>S⁰</td>
<td>When did you want to come in</td>
</tr>
<tr>
<td>S⁰</td>
<td>Friday morning</td>
</tr>
<tr>
<td>S⁰</td>
<td>And what were you wanting to have done</td>
</tr>
<tr>
<td>S⁰</td>
<td>Shampoo cut and a blow dry</td>
</tr>
<tr>
<td>S⁰C⁰</td>
<td>Okay What time on Friday</td>
</tr>
<tr>
<td>S⁰C⁰</td>
<td>Eleven o’clock</td>
</tr>
<tr>
<td>T⁰C⁰N⁰</td>
<td>Okay And your name</td>
</tr>
<tr>
<td>T⁰C⁰N⁰</td>
<td>Susan McRae</td>
</tr>
<tr>
<td>N⁰Tel⁰C⁰</td>
<td>And your phone number</td>
</tr>
<tr>
<td>N⁰Tel⁰C⁰</td>
<td>324 eight thousand</td>
</tr>
<tr>
<td>TeC⁰</td>
<td>Okay Susan</td>
</tr>
<tr>
<td>Res.</td>
<td>Okay</td>
</tr>
<tr>
<td>T conf.</td>
<td>Eleven o’clock on Friday</td>
</tr>
<tr>
<td>T conf.</td>
<td>Thanks</td>
</tr>
<tr>
<td>T conf.</td>
<td>Bye bye</td>
</tr>
<tr>
<td>T conf.</td>
<td>Bye</td>
</tr>
</tbody>
</table>

This conversation would be assigned the following sequence of symbols:

OT⁰ST⁰C⁰NTel⁰Res⁰Tconf.

4. There are some other conventions in the transcripts which shouldn’t prove troublesome, but they do need to be explained: Whenever you see parentheses like so --( )-- this means, if they are filled with words, that the tape at that point was not clear enough for the transcriber to be certain that those were the words spoken; they represent a good guess. Unfilled parentheses indicate that the signal was so unclear as to make even a guess impossible. Parentheses of this sort --[ ]-- which overlap separate
Speaker lines indicate that simultaneous overlapping speech between A and B took place. This doesn’t happen very often, and when it does it shouldn’t cause you any problems as you carry out your analysis. Finally, you will occasionally see "(laughter)" which just means that one or the other party was laughing at that point. You needn’t categorize laughter as anything, so just ignore it.

On the next three pages you will find three different conversations with opening and closing categories selected from the sixteen defined earlier; they are marked at the appropriate turn, and then the assigned symbol sequence is given at the bottom. Go over them and make certain that you see why the symbol string has been assigned.
A. Good morning ( ) House of Beauty
B. Yes I'd like to make an appointment

O
A. Okay Who would you like to make the appointment with
B. I've never been there before

O  S
A. Okay What would you like to get done
B. Cut shampoo and a blow dry please

S  T
A. And when would that be
B. Monday or Tuesday morning
A. Okay Uhm Ten o'clock
B. Sure
A. On Tuesday
B. Okay

T  N
A. And the name is
B. McRae M-C
A. Yeah
B. R-A-E

N  S  conf.
A. And that's a cut and blow
B. Cut shampoo and a blow dry

S  conf.
A. Okay
B. Okay
A. Okay Thanks
B. Thanks
A. Bye bye
B. Bye bye
Good morning Mode Delicia
Yes I'd like to make an appointment
Unhuh What were you planning to get done
Cut shampoo and a blow dry
Cut shampoo and a blow dry And when did you want an appointment for
Saturday morning please
Saturday morning
Okay Have you been here before
No
Oh Okay Ah Can I get your name
Sure It's McRae
How about ten thirty
Sure That's great
Okay That's a shampoo cut and blow dry
Okay
Thank you
Okay
Bye
Bye
Good afternoon Moods Wendy speaking

Yes I'd like to make an appointment

For

Uh Monday or Tuesday morning

Any particular stylist

I've never been there before

Okay And are you having a cut and blow dry

Cut shampoo and blow dry please

Alright Ah Monday ten fifteen

Sure

And your name please

McRae M-C-R-A-E

And telephone number please

879-six thousand

Alright That's Monday May the fourteenth at ten fifteen and Judy will look after you

Okay

Do you know where we're located

Yes I do thank you

Okay Thank you

Bye bye

Okay Bye bye
The next two examples have only their assigned symbol strings. Make certain you can see how the assignment was made.

A. Good morning Ken Hippert hair  
B. Yes I’d like to make an appointment  
A. Okay Who usually does your hair  
B. I’ve never been there before  
A. Okay What are you going to be having done  
B. Cut shampoo and a blow dry  
A. Okay And what time were you thinking about  
B. Saturday morning  
A. Okay What time  
B. Ten  
A. Okay The name  
B. McRae M-C  
A. Unhuh  
B. R-A-E  
A. Okay That’s ten o’clock this Saturday And the phone number  
B. 879-two thousand  
A. Okay Great  
B. Thank you  
A. Bye bye  
B. Bye

OST\textsuperscript{conf}.Tel

A. Good morning Twenty nine twenty nine  
B. Yes I’d like to make an appointment  
A. Okay For what time  
B. Saturday morning please  
A. Okay How would nine thirty be  
B. That’s fine  
A. And the name is  
B. McRae  
A. How do you spell that  
B. M-C-R-A-E  
A. Okay That’s for nine thirty on Saturday  
B. Thank you  
A. Bye bye  
B. Bye

T\textsuperscript{conf}.
Finally, I'd like to test to see whether you can make correct sequential assignments on the following six conversations. You may refer to the sheet of category definitions as well as the examples of analyzed conversations you've already seen. Do you have any questions?

Take as much time as you need; I'm interested in accuracy, not speed.
I have a second set of 18 transcripts I want you to score in a way that is very similar to the way you scored that first set. These conversations are also between a client called B and a beauty shop receptionist called A. B is always a different person on each transcript; sometimes A is the same person on separate transcripts and sometimes he/she is different. Unlike the first set of transcripts you worked with, A and B are acquainted with each other. The purpose of each conversation is exactly the same: B wants to make an appointment to get his or her hair done.

For these new transcripts we will need to add four more categories to the sixteen you worked with before; here they are (abbreviations you can use are in parentheses):

**Intimate talk (I):** Either party is engaged in activities directed toward maintaining or reaffirming a personal relationship between acquaintances; this talk is, at least outwardly, unrelated to the main purpose of the
conversation, which is to make an appointment.

Callee (C): Either party is engaged in activities directed toward establishing the identity of the callee (A).

Name Confirm (N.conf.): Either party is engaged in activities directed toward establishing a mutual understanding about the already established identity of the caller. This category can be used only after the "Name" category has been applied to a turn or turns.

Appointment (appt.): Either party is engaged in activities directed toward establishing that the caller desires an appointment; "appointment" or its synonym must be explicitly mentioned.

The only tricky category here is "Appointment." You will find yourself applying it only to a turn coming from B and you should use it only when the word "appointment" (or a synonym) occurs; also, it never gets applied when the word "appointment" occurs in B's first turn at talking--only when the word occurs in a turn after the first turn. Of course, B might use the word "appointment" in his first turn and also specify what services he wants or what time he wants to come in, in which case you must
make appropriate category assignments. Here are some examples of first turns from B where the word "appointment" occurs. The correct category assignments follow:

1. Yes I'd like to make an appointment for today if possible T°

2. Yes I was wondering if I could make an appointment for later today T°

3. Hi Could I make an appointment for a haircut this afternoon S°T°

None of these get "appt." assigned because they are each B's first turn, but they do get a "Time open" assigned. The third one gets a "Service open" assigned to it as well.

Often B will request an appointment in an indirect way—never mentioning "appointment," but obviously requesting one nevertheless. We need some way of indicating that B is in fact requesting an appointment under these circumstances by specifying a desired time, or services, and so on, and the symbol used to indicate this will be parentheses.
Here are some examples of implicit appointment requests (the word "appointment" doesn't occur) in first turns that don't get "appt." assigned to them:

1. Ah Sue It's Jim Dodge I was in about a month ago I just wonder if you had any free time this morning or early this afternoon

2. Ah Has Sue any time on Thursday

3. Yeah It's Tim Smith here Is there a chance I could get my hair cut shortly

The first example is assigned $N(OT^0)$, where what occurs in parentheses serves the purpose of requesting an appointment in an implicit manner. Likewise, the second example is assigned $(OT^0)$ and the third is assigned $N(ST^0)$.

These sorts of appointment bids also occur at turns other than B's first, and at those placements they receive the same treatment.

So, in summary, here's how to handle appointment requests:
1. If the word "appointment" occurs in B's first turn, don't assign that turn anything that indicates that B asked for an appointment at that point in the conversation. Of course, if B did other things in that first turn such as request an operator or specify a time, etc., you must indicate that.

2. If the word "appointment" occurs in any one of B's turns except the first one, assign that turn "appt." and anything else that may be required.

3. When an appointment request is made indirectly and the word appointment is not used, indicate which happenings serve to make the request by putting parentheses around them; this applies to any turn.

4. When (3) guides you in making an assignment always assume that S and O have been opened and closed all at once, but don't automatically assume this about T; that is, avoid making assignments like $S^0O^0S^C O^C$ unless there seem to be very good reasons for doing so.

Here are three full transcripts with categories assigned to turns and the final sequence of symbols given at the bottom. Make certain that you see how the final string was arrived at because this is what you will be
asked to do on your own later.

A. Good morning UBC Gates
B. It's Mrs. ( ) calling
N. Yes
ST. B. I was wondering if I could get a haircut today
O. A. And ah who usually cuts your hair
B. You do
A. I do
B. Unhuh
N.conf.O. A. Oh ah what was the name again
B. Hunt
A. Oh Hunt Yes
[ ]
N.conf.C. B. (yes)
A. Uhm Yeah What time you want to come in
B. Well what time have you got
A. I have here one o'clock
B. Unhuh
A. Is that suitable
B. Uhm Yeah That'd be okay
T. A. Unhuh Okay then
B. Bye now
A. Bye

N(STO)ON.conf.TC
A. Good afternoon UBC Gates
N^0 B. This is ah Mrs. ( ) speaking
N^c A. Yes
appt.B. I'd like to have a reservation
A. Yes
T^0 B. On Saturday
A. Saturday And ah let's see
B. ( ) What time ( ) is going to take me
   around ten
A. Let me just look here Ah it would have to be
   quite a bit later About eleven
B. Eleven be alright
A. Is that okay
T^c B. Yeah It's okay
    [ ]
S^0 A. Shampoo and set
B. Pardon me
A. Shampoo and set
S^c B. Yeah
A. Alright Thank you very much
    [ ]
B. ( )
A. Bye bye

Nappt.TS
A. Good afternoon UBC Gates
callee⁰
B. Hello Is this Irene
A. No this is Mama
B. Oh Sarah
callee⁴
A. Yes
B. Oh Sarah this is Rick Smith calling
N⁰
A. Oh yeah
N⁴
B. How’re you doing
A. Oh Fine
B. How’s the shop doing
A. Yeah Pretty good
B. Great
IC
A. Unhuh
ST⁰
B. I wanted to see if I could get a haircut Saturday morning
A. Saturday morning (Unhuh)
B. How early could I could I get an appointment
Oassig. A. Saturday Irene have time around
[ ]
B. ( )
A. Ten o’clock
B. Ah Ah Any earlier ones
A. Ah That’s about that She have somebody before
B. Ten o’clock
A. Yeah ten is fine
B. That’s fine
TC
N.confir⁰ A. An an what was the last name again
B. Smith
A. Smith Okay
B. Your electrician
N.confir⁴ A. Electrician Oh yeah That’s right ( ) whoever
Res.⁰ B. Ah Yeah I know you (have) so many customers it’s hard to tell
Res.⁴ A. Yeah Okay
Tconfir.⁰ B. Okay I’ll see you at ten thirty then
Tconfir.⁴ A. Yes Right
B. Thank you very much
A. Okay
B. Bye
A. Bye now
1. There is a preference for non-basic elements to occur.

conversations with non-basic elements

FE = 46.5

FO = 78.0

conversations without non-basic elements

FE = 46.5

FO = 15.0

X^2(1, N=93) = 41.3

2. Non-basic elements are non-intrusive.

conversations with intrusions*

FE = 46.5

FO = 19.0

conversations without intrusions*

FE = 46.5

FO = 74.0

X^2(1, N=93) = 31.4

*An intrusion occurs whenever T, N, S, or O occur after the occurrence of a non-basic element.
3. There is a preference for Time confirm to occur.

conversations with Time confirm $F_e=46.5$

$F_o=58.0$

conversations without Time confirm $F_e=46.5$

$F_o=35.0$

$X^2(1,N=93)=6.8$

4. There is no preference for Service confirm to occur.

conversations with Service confirm $F_e=46.5$

$F_o=25.0$

conversations without Service confirm $F_e=46.5$

$F_o=68$

$X^2(1,N=93)=17.4$

5. There is a preference for Service to occur.

conversations with Service $F_e=46.5$

$F_o=85.0$

conversations without Service $F_e=46.5$

$F_o=8.0$

$X^2(1,N=93)=62.1$
6. There is a preference for Operator to occur.

\[ \begin{align*}
\text{conversations with Operator} & \quad F_e = 46.5 \\
& \quad F_o = 67.0 \\
\text{conversations without Operator} & \quad F_e = 46.5 \\
& \quad F_o = 26.0 \\
\end{align*} \]

\[ X^2(1, N=93) = 30.2 \]

7. Time confirm is not like Name

\[ \begin{align*}
\text{conversations with Time confirm intruding} & \quad F_e = 11.2 \\
& \quad F_o = 1.0 \\
\text{conversations without Time confirm intruding} & \quad F_e = 46.8 \\
& \quad F_o = 57.0 \\
\end{align*} \]

\[ X^2(1, N=58) = 11.5 \]
APPENDIX D

STATISTICAL ANALYSIS of CONVERSATIONAL STRUCTURE in

STUDY IA and STUDY IIIA

The first requirement for an assessment of whether conversational structure exists in these two groups of conversations is a count of how many two-, three-, and four-(basic) element sequences are possible under the null hypothesis within the five restrictions imposed by the data, the methodology, and definitional considerations. These restrictions are described on pages 91 and 92. We need to be able to count all the "legal" sequences attributable to chance (they are called "TOTAL POSSIBLE" in Tables 1 and 8) in order to decide whether or not the observed sequences distribute themselves randomly.

For two-element conversations, which are always comprised of T and N in Study IA, and T and N or T and O in Study IIIA, there are only five possible legal combinations. These five are listed in their entirety for T and N in Table 1.

For three-element conversations (TSN or TNO in Study
IA; TNO, TNS, or OTS in Study IIIA) there are $3! = 6$ possible combinations without embedding or overlap of any variety, and 28 possible combinations of legal embedding and overlap of all varieties.

For four-element conversations, there are $4! = 24$ possible combinations without embedding or overlap of any variety, and 270 legal combinations with embedding and overlap of any variety, for a total of 294 possible combinations.

The easiest way to understand why there are 270 legal non-linear combinations is to consider the total possible number of sequences of openings and closings across four elements, and then systematically eliminate what is illegal among them. There are eight events—$O^o, T^c, S^o, S^c, N^o, N^c, O^o, O^c$—which can occur in $8!$ possible orders without any constraints applied. But an element must open before it may close. To apply this constraint, consider that the $8!$ sequences can be grouped so that within each group the sequences differ from one another only in the assignment of the $o$ and $c$ superscripts. There are 16 sequences in each of these groups ($2!^4$). It helps to see this by imagining having to decide between two orderings of two things ($oc$ and $co$) four times (once for $T$, once for $N$, etc.). A decision tree that accounts for 8
possible sequences would look like this:

(1)
  o c
  / \ 

(2)
  oc co
  / \ / \ 

(3)
  oc co oc co
    / \ / \ / \ 

(4)
  oc co oc co oc co oc co

Then, of course, there is another tree that begins with co yielding 8 more sequences, all of which are illegal. Only one sequence out of sixteen (the left-most above) is legal, so among the 8! possible orderings, 8!/16 = 2520 are legal once the constraint that openings must come before closings is applied.

Let "depth" be the maximum number of topics that are simultaneously open. Only a depth of two is legal, and this allows systematic elimination of some of the 2520 sequences.

For a sequence to be of depth 4, the openings and closings must be patterned thusly: oooocccc. Since there are 4! ways to assign element topics to the openings, and 4! ways to assign them to the closings, there are 4!^2 = 576 (illegal) sequences of depth 4. Put another way, one must decide between 4! sequences two times, once for o and once for c.
There are 5 possible patterns of openings and closings at a depth of 3. They are listed below with the number of ways in which topic elements can be assigned. In each case, the 4! is the number of ways topics can be assigned to the openings, and the product of the other values is the number of ways that topics can be assigned to closings.

\[
\begin{align*}
3.1 \quad \text{oocococco} & \quad (4!)(3:1)(3!) = 432 & \text{N:n denotes the number of} \\
3.2 \quad \text{oocococco} & \quad (4!)(3:2)(2!)(2!) = 288 & \text{combinations} \\
3.3 \quad \text{oococccoc} & \quad (4!)(3!) = 144 & \text{of N things} \\
3.4 \quad \text{oococoocco} & \quad (4!)(2:1)(3!) = 288 & \text{taken n at} \\
3.5 \quad \text{oocoococco} & \quad (4!)(3!) = 144 & \text{a time, or} \\
\text{Total} & \quad = 1296 & \text{N!/n!(N-n)!} \\
& \quad \quad \text{"N choose n"}
\end{align*}
\]

For sequences of (legal) depth 2, there are 7 possible patterns of openings and closings which are described below. Again, 4! is always the number of sequences of opening elements and the product of the remaining values is the number of ways that topic elements can be assigned to closings.

\[
\begin{align*}
2.1 \quad \text{ooococco} & \quad (4!)(2:1)(2:1)(2!) = 192 \\
2.2 \quad \text{ooococco} & \quad (4!)(2:1)(2!) = 96 \\
2.3 \quad \text{ooococco} & \quad (4!)(2!)(2!) = 96 \\
2.4 \quad \text{ooococco} & \quad (4!)(2!) = 48 \\
2.5 \quad \text{ooococcc} & \quad (4!)(2:1)(2!) = 96 \\
2.6 \quad \text{ooocococ} & \quad (4!)(2!) = 48 \\
2.7 \quad \text{ooococcc} & \quad (4!)(2!) = 48 \\
\text{Total} & \quad = 624
\end{align*}
\]

For sequences of (legal) depth 1, openings and closings must fit the pattern oococococ, and there are 4! (= 24) ways in which it may occur.
Since \(24 + 624 + 1296 + 576 = 2520\), all possible sequences of four elements have been accounted for.

Embedding imposes the final set of restraints on what is legal. Embedding occurs within a sequence whenever a subsequence of the form \(A^o B^o B^c A^c\) occurs; here \(B\) is embedded within \(A\). Only \(T\) can take an embedding. Since depths 3 and 4 are all illegal sequences, and since a depth of 1 cannot take an embedding, we need only consider restrictions on the 624 sequences of depth 2.

In pattern 2.7, the only place that embedding can occur is within the final \(oocc\), and topic assignment would need to take the form \(ABBA\) (\(ABAB\) is not embedding). \(A\) will be either \(S\) or \(N\) or \(0\) \(3/4\) of the time and embedding will occur in half of these sequences, so \((3/4)(1/2)\) of the 48 2.7 sequences will be illegal (= 18). A similar argument applies to 2.4 and 2.6 since the only opportunity for embedding occurs within the leading \(oocc\) in 2.4 or the middle \(oocc\) within 2.6. Thus, 18 out of 48 sequences for 2.4 and 2.6 are illegal.

Consider next pattern 2.3. The possibilities are \(ABAB\) or \(ABBA\) followed by either \(CDCD\) or \(CDDC\). \(A\) will be \(T\) \(1/4\) of the time, and there will be illegal embedding (\(CDDC\)) in
half of these cases; C will be T 1/4 of the time, and there will be illegal embedding (ABBA) in 1/2 of these cases, too. B will be T 1/4 of the time, and there will be illegal embedding (ABBA &/or CDDC) in 3/4 of these cases; D will be T 1/4 of the time, and there will be illegal embedding (ABBA &/or CDDC) in 3/4 of these cases as well. The total number of illegal sequences of form 2.3 is therefore $$(96)(1/4)(1/2)+(1/4)(1/2)+(1/4)(3/4)+(1/4)(3/4) = 60.$$ 

For pattern 2.5, embedding can occur only within the final oococc sequence. Topic orderings could be ABACBC (no embedding), ABACCB (C embedded in B), ABBACAC (B embedded in A), or ABBCCA (B and C embedded in A). This means that embeddings are occurring 3/4 of the time, and since the sequence that takes the embedding will be a non-T 3/4 of the time, the number of illegal sequences for 2.5 is $$(96)(3/4)(3/4) = 54.$$ Since 2.2 is like 2.5 except that the embedding sequence occurs early rather than late, there must be 54 illegal sequences for this pattern as well.

There are 8 possible sequences with a 2.1 pattern. They are listed below. Upper case denotes the fixed sequence of openings; lower case denotes the variable sequence of closings. In every case A,B,C,D (or a,b,c,d) can each take on the value T, or the value N, or the value S, or the value 0. The proportion of time that a sequence
will be illegal is listed in the column on the right.

| 2.1.1 | A B a C b D c d | no embedding | 0 |
| 2.1.2 | A B a C b D d c | D embedded in C | 3/4 |
| 2.1.3 | A B a C c D b d | C embedded in B | 3/4 |
| 2.1.4 | A B a C c D d b | C and D embedded in B | 3/4 |
| 2.1.5 | A B b C a d c d | B embedded in A | 3/4 |
| 2.1.6 | A B b C a D d c | B embedded in A; D embedded in C | 1 |
| 2.1.7 | A B b C c D a d | B & C embedded in A | 3/4 |
| 2.1.8 | A B b C c D d a | B,C,D all embedded in A | 3/4 |

The systematic variation in closing topics between 2.1.1 and 2.1.8 entails that there must be \( \frac{192}{8} = 24 \) patterns of each 2.1.n sequence. The number of illegal sequences of form 2.1 is then \( (24)(6(3/4)+1) = 132 \).

The number of depth 2 sequences that contain illegal embedding is \( 18+18+18+60+54+54+132 = 354 \), which leaves 270 legal depth 2 sequences. When these are added to the 24 depth 1 sequences, we get 294 legal four-topic element sequences.

Returning to three-topic conversations, it is possible to explain in the same terms as for four topic conversations why there is a total of 34 possible legal sequences under the null hypothesis. For a depth of 1, there are \( 3! = 6 \) possible combinations of 3 topics, all of which are legal. For a depth of 2, there are three possible patterns of openings and closings which are listed below together with their numbers of possible sequences.
Using the same notation as in the 2.1.n series, it is possible to enumerate illegal sequences for (e), (f), and (g) in terms of restrictions on embedding.

Consider (f) first. Embedding will occur only within the leading oocc sequence (A B b a C c is the most general embedded case, A B a b C c is the most general non-embedded case). Two-thirds of the time A will not be T, and 1/2 of these will be embedded, so $(2/3)(1/2)(12) = 4$ of the (f) sequences are illegal. A similar argument applies to the (g) pattern since the trailing oocc sequence is the only place embedding can occur, so there must be 4 illegal (g) sequences.

Pattern (e) resolves itself into the following four possible sequences; there are six of each.

```
A B a C b c  no embedding
A B b C a c  B embedded in A
A B a C c b  C embedded in B
A B b C c a  B and C embedded in A
```

For the second, third, and fourth sequences the
embedding topic (B or C or A respectively) will be a non-T 2/3 of the time. Thus, there are (2/3)(6) rejects for each of these three types, and no rejects for the first sequence. The total number of rejects for (e) is therefore 12. We began with 48 possible three topic sequences of depth 2. Rejects total 4+4+12 = 20, so there are 48-20 = 28 possible legal depth 2 sequences. When added to the 6 possible depth 1 sequences, we have 34 possible three-topic legal sequences.

The relevant statistic that allows for a test of structure, which in essence is a test of whether sequences distribute themselves in a non-random way, is Chi Square. It is not possible to use Chi Square tables because the expected frequencies for these data fall below five; tables evaluate an obtained $X^2$ against a mathematically derived distribution of $X^2$ that assumes that observed frequencies distribute themselves normally around expected frequencies. This assumption is not warranted when $F_e$ falls below five (Minimum, 1970).

A randomization procedure gets around this problem by generating an empirical $X^2$ distribution against which the obtained $X^2$ can be evaluated (see Edgington, 1980). All the computations are carried out by a computer program that essentially does the following:
1. It determines how N observations (conversations) would distribute themselves randomly across K categories (Total Possible Sequences) by selecting a number randomly between 1 and K, N times.

2. It then calculates $X^2$ for the distribution obtained in step (1).

3. Steps (1) and (2) are repeated a large number of times—hundreds of thousands—so that a $X^2$ distribution can be generated.

4. It keeps track of the proportion of $X^2$'s obtained during the generation procedure that equal or exceed the $X^2$ obtained from the actual data so that the likelihood that the observed $X^2$ was due to chance can be calculated.
Appendix E

CONVERSATIONAL PREFERENCE: STUDY IA

1. There is a preference for four-element conversations.

| Two-element conversations | Fe = 31.0 | Fo = 3.0 |
| Three-element conversations | Fe = 31.0 | Fo = 29.0 |
| Four-element conversations | Fe = 31.0 | Fo = 61.0 |

\[ \chi^2(2, N=93) = 54.5 \]

2. There is a preference for non-linear conversations.

| Linear conversations | Fe = 46.5 | Fo = 35.0 |
| Non-linear conversations | Fe = 46.5 | Fo = 58.0 |

\[ \chi^2(1, N=93) = 5.2 \]
3. Complex embedding is the preferred non-linear conversation.

conversations showing complex embedding
\[ F_e = 34.5 \]
\[ F_o = 62.0 \]

non-linear conversations not showing complex embedding
\[ F_e = 34.5 \]
\[ F_o = 7 \]

\[ X^2(1, N=69) = 42.2 \]

4. There is a preference for conversations to start with Time.

conversations that start with Services
\[ F_e = 22.5 \]
\[ F_o = 15.5 \]

conversations that start with Operator
\[ F_e = 22.5 \]
\[ F_o = 29.5 \]

conversations that start with Time
\[ F_e = 22.5 \]
\[ F_o = 45.0 \]

conversations that start with Name
\[ F_e = 22.5 \]
\[ F_o = 1.0 \]

\[ X^2(3, N=93) = 47.4 \]
5. Among three-element conversations, the preferred third element is Services.

\[
\text{Time, Name, Services} \\
F_e = 14.0 \\
F_0 = 23
\]

\[
\text{Time, Name, Operator} \\
F_e = 14.0 \\
F_0 = 5
\]

\[X^2(1, N=28) = 10.5\]
1. The fact that a caller is tempted to make a direct statement of purpose into a question, and thus, probably a request, is itself interesting. Indirect expressions of purpose such as "I'd like," for whatever reason, do not seem to need to be modified in this way.

2. This was a temporary expedient in the sense that if conversational structure were to be made apparent, it seemed advisable at this point to limit variability as much as possible. Although discarded conversations might turn out to display structure similar to that displayed by the non-discards, that can be investigated later. Confirming results among discards would enhance the generalizability of the results of the current study.
REFERENCES


