A PRAGMATIC STRUCTURAL ANALYSIS

OF CONVERSATIONS FOR

MAKING APPOINTMENTS

by

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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.

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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 who 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: <u>Syntax</u>

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: <u>Semantics</u>

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: <u>Pragmatics</u>

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 McKean, 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).

<u>Syntax</u>

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 *pragmantax*.

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 (Levinsion, 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 meant-nn z by uttering U if and only if:

(i) S intended U to cause some effect z in recipient H

(ii) S intended (i) to be achieved simply by H 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 <u>intends</u> 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-nn 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 fundamemtal 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-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 that addressees use rules of inference derived from Grices'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 effected 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 occuring 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
oviously 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 shakeing 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

acquisition. Watson (1987, 1985a, 1985b, 1982) found
evidence that certain aspects of word meaning arise from
the child's adoption of the "literate register" which
specifies under what circumstances, by whom, and for what
purpose particular definitional expressions are
appropriate.

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 recieved 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 Schegloff 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 acquiesence 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 coversational 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.

<u>Subgoal Structure and Social Activities</u>

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 committment 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 IIIB was an attempt to demonstrate the
objectivity of the structural assignments made to the Study
IIIA data. Inter-rater reliability tests were obtained.

STUDY I

PART A

CONVERSATIONAL STRUCTURE

INTRODUCTION

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 akward 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 reasons[2]. 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 useage 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 recieved 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

asserting 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 hiearchical 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. <u>Time</u>: either party is engaging in activities directed toward establishing a mutually agreed upon time for the appointment.

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

S   3. <u>Services</u>: 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. <u>Name</u>: either party is engaged in activities directed toward establishing a mutual understanding about the identity of the caller.

O assig.   5. <u>Operator assignment</u>: 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 is analogous to the "Time confirm", but concerns the operator.

S conf.   8. Services confirm: again, this 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 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.

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 props (usually pictures) are
useful in providing services to the caller.

Res   16. Residual: none of the above categories
applies.

D. <u>Illustrations of Structural Categories in Conversations</u>

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^O	A. Ah For what day
	B. Saturday morning please
	A. Ah What time would you like that
	B. About ten
T^C S^O	A. Okay What's that for
	B. Cut shampoo and a blow dry please
S^C N^O	A. Okay And your name please
	B. Mcrae M-C-R-A-E
	A. M-C
	B. R-A-E
N^C (residual)	A. Okay We'll see you then
	B. Thank you
	A. Bye bye
	B. Bye

	A. Good Morning New Wave
	B. Yes I'd like to make an appointment
O^O	A. Okay Who'd you like it with
	B. I've never been there before
$O^C T^O$	A. When did you want to come in
	B. Friday morning
S^O	A. And what were you wanting to have done
	B. Shampoo cut and a blow dry
S^C	A. Okay what time on Friday
	B. Eleven o'clock
$T^C N^O$	A. Okay And your name
	B. Susan McRae
N^C phone^O	A. And your phone number
phone^C	B. 324 one thousand
	A. Okay Susan
	B. Okay
(t. confirm)	A. Eleven o'clock on Friday
	B. Thanks
	A. Bye bye
	B. 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-occurrance) 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 occurrance 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^oT^c Referral open Referral close $S^oS^cN^oN^c$

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:

$$T^O T^C S^O S^C N^O N^C$$

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 $T^O, T^C, S^O, S^C, N^O, N^C, O^O, O^C$ 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 $T^OT^CN^ON^CS^OS^C$, or TNS for short (when items
open, then close without other items interferring
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 $T^OS^OS^CT^CN^ON^C$, or T^OST^CN for short. The second
transcribed conversation above is an example of embedding,
and it had the following structure assigned to it:

OT^OST^CN(phone)(time confirm)

"Overlapping" also occurred, but very infrequently, and
looks like this: $T^ON^OT^CN^CS$. 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 1

Obtained and Possible Category Sequences for 93

Conversations

Sequences for two elements

POSSIBLE   OBTAINED

a. linear orders   3
   TN
   NT
b. simple embedding   0
   T^ONT^C
c. overlap   0
   $T^ON^OT^CN^C$
   $N^OT^ON^CT^C$

TOTAL POSSIBLE=5

TABLE 1 continued
Sequences for three elements (TSN)

	POSSIBLE	OBTAINED
a.	linear orders	13
	TSN	
	NTS	
	STN	
	TNS	
	NST	
	SNT	
b.	simple embedding	0
	$T^o\ SNT^C$	
	T^oNST^C	
c.	complex embedding	9
	T^oST^CN	
	T^oNT^CS	
	ST^oNT^C	
d.	overlap	0
	$T^oN^oT^CN^CS$	
	$TN^oS^oN^CS^C$	
	.	
	.	
	.	
e.	overlap with embedding	1
	$T^oNS^oT^CS^C$	
	$S^oT^oS^CNT^C$	
	$N^oT^oN^CST^C$	
	.	
	.	
	.	

TOTAL POSSIBLE=34

Sequences for three elements (TON)

	POSSIBLE	OBTAINED
a.	linear orders	2
b.	simple embedding	0
c.	complex embedding	2
d.	overlap	0
e.	overlap with embedding	1

TOTAL POSSIBLE=34

Table 1 continued

<u>Sequences for 4 elements</u>

POSSIBLE	OBTAINED
a. linear orders	17
b. simple embedding	0

T^oSNOT^C
T^oSONT^C

.
.
.

| c. complex embedding | 40 |

T^oSNT^CO
T^oNST^CO
T^oOT^CNS
T^oOT^CSN

.
.
.

| d. overlap | 0 |

$N^oT^oN^CT^COS$

.
.
.

| e. overlap with simple embedding | 0 |

$T^oSNO^oT^CO^C$
$OT^oSN^oT^CN^C$

.
.
.

| f. overlap with complex embedding | 5 |

$T^oON^oT^CN^CS$

.
.
.

TOTAL POSSIBLE=294

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^o 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 O as the third
element in these conversations presents an interesting
interpretive challenge. So far, the appearance of S and O
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 reseacher)
one-operator establishments. (Study IIIA considered this
explanation.)

If O 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 can not 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 reseacher 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 "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. 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 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.

STUDY II

PART A

RESTRUCTURING TASKS

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 <u>rules</u> 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 <u>with</u> 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

7.
A. Okay. That's for a haircut shampoo and blow dry.
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.

5.
A. Okay. What time? Ten thirty? Eleven?
B. Ten thirty's great.

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

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

8.
A. Uhm. Okay. Cut and blow dry. Right?
B. Yeah.

9.
A. Okay. Fine.
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 $T^O ST^C NSconf$.

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 ony 82 because of a scoring error that resulted in data loss for one subject.

TABLE 2

<u>Frequencies of Obtained Card Sequences for the "Oak"
Conversation</u>

<u>FREQUENCY</u>	<u>SEQUENCE</u>
16	1 3 7 2 4 5 6 8 9
12	1 2 4 5 6 3 7 8 9
11	1 3 2 4 5 6 7 8 9
7	1 2 4 3 7 5 6 8 9
3	1 2 4 3 5 6 7 8 9
3	1 5 6 3 7 2 4 8 9
2	1 3 7 2 4 8 5 6 9
2	1 3 7 4 2 5 6 8 9
2	1 2 3 7 4 5 6 8 9
2	1 3 2 5 6 4 7 8 9
2	1 2 3 4 5 6 7 8 9[a]
2	1 3 7 2 8 4 5 6 9
1	1 3 2 4 8 5 6 7 9
1	1 8 2 4 3 7 5 6 9
1	1 5 6 3 7 4 2 8 9
1	1 4 3 7 2 5 6 8 9
1	1 3 2 4 7 5 6 8 9
1	1 2 3 5 6 4 8 7 9
1	1 2 5 6 4 3 7 8 9
1	1 2 4 3 5 6 8 7 9
1	1 3 5 6 2 4 7 8 9
1	1 2 4 5 6 3 8 7 9
1	1 3 2 8 4 5 6 7 9
1	1 5 2 4 3 7 6 8 9
1	1 2 3 4 5 6 8 7 9
1	1 2 3 7 4 5 6 9 8
1	1 5 6 3 2 4 7 9 8
1	1 8 3 2 4 5 6 7 9
1	1 5 6 2 4 3 7 8 9
1	1 3 2 4 5 6 8 7 9

TOTAL=82

[a]This sequence represents the correct restructuring.

TABLE 3

<u>Frequencies of Obtained Card Sequences for the "Irene"</u>
<u>Conversation</u>

<u>FREQUENCY</u>	<u>SEQUENCE</u>
11	1 2 4 5 3 8 6 7 9 10
7	1 3 8 2 4 5 6 7 9 10
6	1 2 4 5 3 8 9 6 7 10
6	1 3 8 2 4 5 9 6 7 10
5	1 2 4 5 6 7 3 8 9 10
3	1 6 7 2 4 5 3 8 9 10
3	1 3 8 4 2 5 6 7 9 10
2	1 2 3 4 5 6 7 8 9 10[a]
2	1 2 4 9 5 3 8 6 7 10
2	1 2 4 5 9 6 7 3 8 10
2	1 6 7 3 8 2 4 5 9 10
2	1 3 2 4 5 9 6 7 8 10
1	1 2 5 4 3 6 7 8 9 10
1	1 2 4 9 3 8 6 7 5 10
1	1 2 4 5 6 7 9 3 8 10
1	1 2 6 7 5 4 3 8 9 10
1	1 2 4 3 8 5 9 6 7 10
1	1 2 4 3 8 5 6 7 9 10
1	1 3 2 4 5 6 7 8 9 10
1	1 2 4 3 6 7 5 9 8 10
1	1 3 8 9 2 4 5 6 7 10
1	1 6 7 5 2 4 3 8 9 10
1	1 6 3 8 2 4 5 7 9 10
1	1 9 3 8 2 4 5 6 7 10
1	1 6 7 3 8 2 4 9 5 10
1	1 3 2 5 4 8 9 6 7 10
1	1 2 4 5 3 9 6 7 8 10
1	1 3 9 2 5 4 6 7 8 10
1	1 2 5 4 3 8 6 7 9 10
1	1 5 2 3 4 8 6 7 9 10
1	1 5 3 2 6 7 8 9 4 10
1	1 3 2 5 4 6 7 9 8 10
1	1 2 4 5 9 3 8 6 7 10
1	1 3 2 4 5 8 6 7 9 10
1	1 3 2 5 9 6 7 8 4 10
1	1 5 3 8 4 9 6 7 2 10
1	1 2 3 4 5 8 6 7 9 10
1	1 3 2 5 8 6 7 9 4 10
1	1 2 4 3 8 6 7 5 9 10
1	1 3 6 7 2 5 4 8 9 10
1	1 6 7 3 2 4 5 8 9 10
1	1 2 3 8 4 5 6 7 9 10
1	1 2 4 5 3 6 7 8 9 10
1	1 3 2 5 4 9 6 7 8 10

TOTAL=83

As is readily apparent, correct resructurings (i.e., the ones that duplicate the conversations as they actually occurred) were obtained remarkably infrequently compared with incorrect restructurings.

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 occurrance of a correct sequence of either conversation .008.

The probability of getting two correct restructurings by chance is small (for instance, 0.0000004 for Oak with "hints") the probability of getting 16 incorrect restructurings 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 restructurings (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 _in_correct 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, 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 nth 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 $(n+2)$

<u>sequential restraint score</u> - 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 suboal 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.

Study II

PART B

NATURALNESS RATINGS

INTRODUCTION

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

FORM

	naturally occurring	most popular restructure	2nd most popular restructure

RATING

"OAK"

most natural	27	11	15
2nd most natural	21	19	13
least natural	5	23	25

"IRENE"

most natural	23	15	15
2nd most natural	9	25	19
least natural	21	13	19

TABLE 4 continued

Frequencies of Obtained Ratings for Three Forms of a Conversation

FORM

	naturally occurring	most popular restructure	2nd most popular restructure

RATING

"OAK" and "IRENE" COMBINED

	naturally occurring	most popular restructure	2nd most popular restructure
most natural	50	26	30
2nd most natural	30	44	32
least natural	26	36	44

TABLE 5

Frequencies of Obtained Form Orderings

FREQUENCY

_____

FORM ORDERING

_____

"OAK"

most natural	2nd most natural	least natural	
A[a]	B	C	16
C	B	A	3
B	C	A	2
B	A	C	9
A	C	B	11
C	A	B	12

_____

"IRENE"

most natural	2nd most natural	least natural	
B	A	C	3
C	A	B	6
A	C	B	7
A	B	C	16
B	C	A	12
C	B	A	9

[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 <u>embedded</u>
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 noteworty. 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.

STUDY III

PART A

SUBGOAL STRUCTURE IN NATURALLY OCCURRING

CONVERSATIONS

INTRODUCTION

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 <u>not</u> 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

CALLEE	No. OF CONVERSATIONS
a	28
b	3
c	18
d	10

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

Numbers of Conversations Held by Callees of Both Sexes

SEX	No. OF CONVERSATIONS
M	27
F	32

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

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);

$X^2(1,N=59)=2.44,p>.05.$

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; $X^2[1,N=59]=4.3,p<.05.$

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

POSSIBLE   OBTAINED

a. T   2

b. S   0

c. N   0

d. O   0

TOTAL POSSIBLE=0

Sequences for two elements (O,T)

POSSIBLE   OBTAINED

a. linear orders
   OT   3
   TO   0
b. simple embedding   0
c. overlap   0

TOTAL POSSIBLE=5

Sequences for two elements (N,T)[a]

POSSIBLE   OBTAINED

a. linear orders
   NT   7
   TN   0
b. simple embedding   0
c. overlap   0

TOTAL POSSIBLE=5

[a]There were no other two element conversations (i.e., no
T,S or N,S or N,O or S,O)

TABLE 8 continued

Sequences for three elements (T,N,O)

POSSIBLE	OBTAINED
a. linear orders	7
b. simple embedding	1
c. complex embedding	3
d. overlap	0
e. overlap with embedding	0

TOTAL POSSIBLE=34

Sequences for three elements (T,N,S)

POSSIBLE	OBTAINED
a. linear orders	10
b. simple embedding	0
c. complex embedding	4
d. overlap	0
e. overlap with embedding	0

TOTAL POSSIBLE=34

Sequences for three elements (O,T,S)

POSSIBLE	OBTAINED
a. linear orders	1
b. simple embedding	0
c. complex embedding	0
d. overlap	0
e. overlap with embedding	0

TOTAL POSSIBLE=34

TABLE 8 continued

Sequences for four elements

POSSIBLE   OBTAINED

a. linear   10
b. simple embedding   0
c. complex embedding   12
d. overlap   1
e. overlap with simple embedding   0
f. overlap with complex embedding   0

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

NUMBER OF ELEMENTS   NUMBER OF CONVERSATIONS

        one   2
        two   9
        three   26
        four   22

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

conversation.

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 occurrring
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 reliabilty 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 O2 made structural
assignments, but it was encouraged while O1 and O2 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 O1 being present. As before, no
discussion took place between O1 and O2 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 0.80 (p_0=0.89,p_c=0.44), which is significant beyond the .01 level (sigma $_{k_0}$=0.2).

NUMBER

Pearson's *r* was 0.81 (Sigma xy=441.0,S_xS_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= 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.

NUMBER

Pearson's *r* was 0.78 (Sigma xy=180, S_xS_y=230.8) which is significant at the .01 level.

CATEGORIES

Kappa was 1.

SEQUENCE

Kappa was 1.

DISCUSSION

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 IA. 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.

FINAL DISCUSSION

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
O 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 <u>say</u> 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 <u>action</u>: 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 linguisitic 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 hiearchical 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
ST^O 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
T^C 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

       A. Service Can I help you
T^{O}S^O B. Ah yeah Could I get a Saturday appointment for an
          eighth month for an eight month check up on my
          Celica
S^C 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
T^C B. Oh Okay
N^O A. The name?
       B. It's Goff G-O-F-F
N^C A. Okay
       B. Thanks very much
       A. Thank you
       B. Bye
       A. Bye bye

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          A. Breach Medical
O^O       B. Yes I'd like to make an appointment to see
             Dr. Spooner I'm a patient of hers.
O^C S^C   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 ( )
                                            [        ]
S^C T^O   A.                                   Okay
             Thursday at ten thirty
T^C       B. Oh perfect
N^O       A. And your name
N^C       B. Ah Muriel Sterm S-T-E-R-M
phone^O   A. And your phone number Muriel
          B. Uhm Ah Home is 926-4359
          A. Unhuh
          B. Do you want work
phone^C   A. No That's fine
          B. Okay
Tconfir   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

   T^O ST^C N

   OSTNphoneTconfir.

(e) It is relatively easy to refer to overall conversational purpose when a summons-answer sequence (as when the phone rings, the 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 posses
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 T^c 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--the theraputic 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.

APPENDIX A

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.

Res 16. Residual: none of the above categories applies.

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.

T^o 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
T^c S^o 7 A. Okay What's that for
8 B. Cut shampoo and a blow dry please
S^c N^o 9 A. Okay And your name please
10 B. Mcrae M-C-R-A-E
11 A. M-C
12 B. R-A-E
N^c Res   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 <u>sequence</u> 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^o occurred, then S^c occurred, then N^o 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 <u>sequence</u> of what's happening that matters. The above conversation would be assigned <u>TSNRes</u>. 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:

	A. Good morning New Wave
	B. Yes I'd like to make an appointment
O^O	A. Okay Who'd you like it with
	B. I've never been there before
$O^C T^O$	A. When did you want to come in
	B. Friday morning
S^O	A. And what were you wanting to have done
	B. Shampoo cut and a blow dry
S^C	A. Okay What time on Friday
	B. Eleven o'clock
$T^C N^O$	A. Okay And your name
	B. Susan McRae
$N^C Tel^O$	A. And your phone number
	B. 324 eight thousand
Tel^C	A. Okay Susan
Res.	B. Okay
T conf.	A. Eleven o'clock on Friday
	B. Thanks
	A. Bye bye
	B. Bye

This conversation would be assigned the following
sequence of symbols:

$$OT^OST^CNTelResTconf.$$

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^O            A. Okay Who would you like to make the
                          appointment with
                       B. I've  never been there before
        O^C S^O        A. Okay What would you like to get done
                       B. Cut shampoo and a blow dry please
        S^C T^O        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^C N^O        A. And the name is
                       B. McRae M-C
                       A. Yeah
                       B. R-A-E
    N^C S conf.^O      A. And that's a cut and blow
                       B. Cut shampoo and a blow dry
        S conf.^C      A. Okay
                       B. Okay
                       A. Okay Thanks
                                 [        ]
                       B.        Thanks
                       A. Bye bye
                          [        ]
                       B. Bye bye


                          OSTNSconf.
```

	A. Good morning Mode Delicia
	B. Yes I'd like to make an appointment
S^O	A. Unhuh What were you planning to get done
	B. Cut shampoo and a blow dry
S^C T^O	A. Cut shampoo and a blow dry And when did you want an appointment for
	B. Saturday morning please
	A. Saturday morning
	Okay Have you been here before
	B. No
P^C N^O	A. Oh Okay Ah Can I get your name
	B. Sure It's McRae
N^C	A. How about ten thirty
	B. Sure That's great
T^C S conf.	A. Okay That's a shampoo cut and blow dry Okay
	B. Thank you
	A. Okay
	B. Bye
	A. Bye

$$ST^OPNT^CSconf.$$

```
                    A. Good afternoon Moods Wendy speaking
                    B. Yes I'd like to make an appointment
        Tᵒ          A. For
                    B. Uh Monday or Tuesday morning
        Oᵒ          A. Any particular stylist
                    B. I've never been there before
        Oᶜ Sᵒ       A. Okay And are you having a cut and blow
                       dry
                    B. Cut shampoo and blow dry please
        Sᶜ          A.  Alright Ah Monday ten fifteen
                    B. Sure
        Tᶜ Nᵒ       A. And your name please
                    B. McRae M-C-R-A-E
        Nᶜ Telᵒ     A. And telephone number please
   Telᶜ T conf.     B. 879-six thousand
      O assig.      A. Alright That's Monday May the fourteenth
                       at
                       ten fifteen and Judy will look after you
                    B. Okay
        Lᵒ          A. Do you know where we're located
                    B. Yes I do thank you
                            [           ]
        Lᶜ          A.            Okay      Thank you
                                      [           ]
                    B.                        Bye bye
                    A. Bye bye


        TᵒOSTᶜNTelTconf.Oassig.L
```

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

$$OST^{O}NT^{C}conf.Tel$$

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

$$T^{O}NT^{C}conf.$$

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.

APPENDIX B

MODIFIED INTEROBSERVER TRAINING INSTRUCTIONS

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 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^o

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

3. Hi Could I make an appointment for a haircut this afternoon   S^oT^o

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

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 $S^oO^oS^cO^c$ 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
N°	B.	It's Mrs. ( ) calling
N^C	A.	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.°	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^C	A.	Unhuh Okay then
	B.	Bye now
	A.	Bye

$$N(ST°)ON.conf.T^C$$

```
        A. Good afternoon UBC Gates
Nᵒ      B. This is ah Mrs. (    ) speaking
Nᶜ      A. Yes
appt.   B. I'd like to have a reservation
        A. Yes
Tᵒ      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
Tᶜ      B. Yeah It's okay
               [                ]
Sᵒ      A.          Shampoo   and set
        B. Pardon me
        A. Shampoo and set
Sᶜ      B. Yeah
        A. Alright Thank you very much
               [                       ]
        B.           (                 )
        A. Bye bye
```

Nappt.TS

	A.	Good afternoon UBC Gates
callee^O	B.	Hello Is this Irene
	A.	No this is Mama
	B.	Oh Sarah
callee^C	A.	Yes
N^O	B.	Oh Sarah this is Rick Smith calling
N^C	A.	Oh yeah
I^O	B.	How're you doing
	A.	Oh Fine
	B.	How's the shop doing
	A.	Yeah Pretty good
	B.	Great
I^C	A.	Unhuh
ST^O	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
T^C	B.	That's fine
N.confir^O	A.	An an what was the last name again
	B.	Smith
	A.	Smith Okay
	B.	Your electrician
N.confir^C	A.	Electrician Oh yeah That's right ( ) whoever
Res.^{O}	B.	Ah Yeah I know you (have) so many customers it's hard to tell
Res.^{C}	A.	Yeah Okay
Tconfir.^{O}	B.	Okay I'll see you at ten thirty then
Tconfir.^{C}	A.	Yes Right
	B.	Thank you very much
	A.	Okay
	B.	Bye
	A.	Bye now

calleeNI(ST^O) Oassig.T^{C}Nconfir.Res.Tconfir.

APPENDIX C

BASIC and NON-BASIC ELEMENTS: STUDY IA

1. There is a preference for non-basic elements to occur.

conversations with non-basic $F_e=46.5$
elements $F_o=78.0$

conversations without $F_e=46.5$
non-basic elements $F_o=15.0$

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

2. Non-basic elements are non-intrusive.

conversations with $F_e=46.5$
intrusions[*] $F_o=19.0$

conversations without $F_e=46.5$
intrusions[*] $F_o=74.0$

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

[*]An intrusion occurs whenever T,N,S, or O occur after the occurrance 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.

conversations with $\qquad$ $F_e = 46.5$
Operator $\qquad$ $F_o = 67.0$

conversations without $\qquad$ $F_e = 46.5$
Operator $\qquad$ $F_o = 26.0$

$$X^2(1, N=93) = 30.2$$

7. Time confirm is not like Name

conversations with $\qquad$ $F_e = 11.2$
Time confirm intruding $\qquad$ $F_o = 1.0$

conversations without $\qquad$ $F_e = 46.8$
Time confirm intruding $\qquad$ $F_o = 57.0$

$$X^2(1, N=58) = 11.5$$

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.
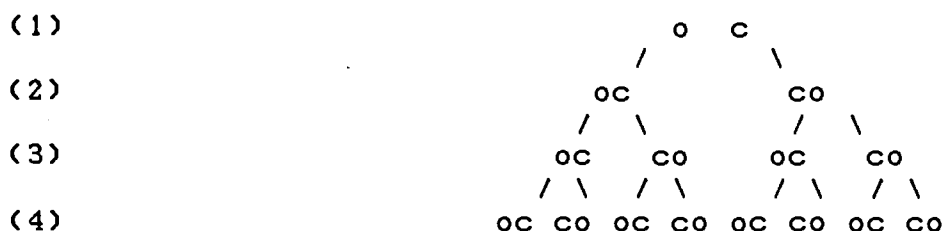
For three-element conversations (TSN or TNO in Study

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--T^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.

```
3.1  ooococcc   (4!)(3:1)(3!)        = 432    N:n denotes the
3.2  oooccocc   (4!)(3:2)(2!)(2!) = 288      number of
3.3  oooccooc   (4!)(3!)            = 144    combinations
3.4  oocooccc   (4!)(2:1)(3!)       = 288    of N things
3.5  ocoooccc   (4!)(3!)            = 144    taken n at
                                            a time, or
              Total        =  1296           N!/[n!(N-n)!]
                                            ("N choose n")
```

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.

```
2.1  oococococ   (4!)(2:1)(2:1)(2!)=  192
2.2  oococcoc    (4!)(2:1)(2!)     =   96
2.3  ooccoocc    (4!)(2!)(2!)      =   96
2.4  ooccococ    (4!)(2!)          =   48
2.5  ocoococc    (4!)(2:1)(2!)     =   96
2.6  ocooccoc    (4!)(2!)          =   48
2.7  ococooocc   (4!)(2!)          =   48

              Total     =    624
```

For sequences of (legal) depth 1, openings and closings must fit the pattern ococococ, 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 O 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), ABBCAC (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 O. 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 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.

(e) oococc	(3!)(2:1)(2!)	= 24
(f) ooccoc	(3!)(2!)	= 12
(g) ocoocc	(3!)(2!)	= 12
	Total =	48

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	$F_e=31.0$ $F_o= 3.0$
Three-element conversations	$F_e=31.0$ $F_o=29.0$
Four-element conversations	$F_e=31.0$ $F_o=61.0$

$$X^2(2,N=93)=54.5$$

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

linear conversations	$F_e=46.5$ $F_o=35.0$
non-linear conversations	$F_e=46.5$ $F_o=58.0$

$$X^2(1,N=93)=5.2$$

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.

Time, Name, Services $F_e = 14.0$
conversations $F_o = 23$

Time, Name, Operator $F_e = 14.0$
conversations $F_o = 5$

$$X^2(1, N=28) = 10.5$$

FOOTNOTES

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.

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