COGNITIVE PSYCHOLOGY 11, 430–477 (1979)

Responding to Indirect Speech Acts

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Indirect speech acts, like the request *Do you know the time?*, have both a literal meaning, here "I ask you whether you know the time," and an indirect meaning "I request you to tell me the time." In this paper I outline a model of how listeners understand such speech acts and plan responses to them. The main proposals are these. The literal meaning of indirect speech acts can be intended to be taken *seriously* (along with the indirect meaning) or merely pro forma. In the first case listeners are expected to respond to both meanings, as in *Yes, I do—it's six*, but in the second case only to the indirect meaning, as in *It's six*. There are at least six sources of information listeners use in judging whether the literal meaning was intended seriously or pro forma, as well as whether there was intended to be any indirect meaning. These proposals were supported in five experiments in which ordinary requests for information were made by telephone of 950 local merchants.

Most sentences can be used to convey meanings indirectly. *Is Julia at home?* can be used in its literal sense to ask a question, a *direct* speech act. On the telephone it can also be used as a request to call Julia to the phone, an *indirect* speech act. Although much is known about the linguistic properties of indirect speech acts (see, e.g., Cole & Morgan, 1975), less is known about the processes by which they are produced or understood. In understanding, there are two questions of particular interest. How do listeners decide whether an utterance should be taken directly or indirectly? And if it is to be taken indirectly, how do they decide what its indirect meaning should be?

To get at these questions, I have chosen to study not just indirect speech acts, but also people's responses to them. Take *Is Julia at home?* When it is construed literally, it elicits such responses as *Yes, she is* or *No, she isn't*. But when it is construed as an indirect request, it elicits two distinct classes of responses. In some contexts it leads to simple responses, like *I'll get her* or *Just a minute*, which respond to the indirect meaning alone. In other contexts it leads to two-part responses, like *Yes,*

This research was supported in part by Grant MH-20021 from the National Institute of Mental Health, by the Center for Advanced Study in the Behavioral Sciences, and a National Endowment for the Humanities Fellowship. I thank Eve V. Clark, Philip N. Johnson-Laird, Willem J. M. Levelt, Ellen M. Markman, Jerry L. Morgan, Ivan A. Sag, Edward E. Smith, and Ewart A. C. Thomas for their counsel on various aspects of the research and the manuscript. I am most deeply indebted to Susan L. Lyte, who sacrificed her left ear and right index finger to make this research possible. Reprint requests should be sent to Herbert H. Clark, Department of Psychology, Stanford University, Stanford, CA 94305.

0010-0285/79/040430-48$05.00/0

she is—I'll get her, the first part of which, *Yes, she is,* answers the literal question, and the second part, *I'll get her,* responds to the indirect request. When do the one- and two-part responses occur, and why? These are two questions I will be particularly interested in. I will argue that they bear critically on how indirect speech acts should be characterized and how they are actually understood.

Responses to indirect speech acts, however, are important in their own right. In ordinary conversation, many speech acts, whether direct or indirect, come in what have been called *adjacency pairs.* Requests are responded to by promises of compliance, questions by answers, offers by acceptances or refusals, and assertions by acknowledgments. The first half of each adjacency pair is intended to set up its response, and the second half, to satisfy the obligations set up. In conversation, it is these adjacency pairs that enable the participants to coordinate turn taking, the introduction and changing of topics, and the opening and closing of the conversation itself (Goffman, 1976; Sacks, Schegloff, & Jefferson, 1974; Schegloff, 1968; Schegloff, Jefferson, & Sacks, 1977; Schegloff & Sacks, 1973). It is important to learn more about adjacency pairs per se.

This paper, then, is about how people respond to indirect speech acts. It is divided into four parts. In the first, after a review of the major properties of indirect speech acts, I propose a matching set of properties for their responses. In the second part, I outline a model of how people understand indirect speech acts and plan their responses. In the third part, I report five experiments that were designed to refine this model. And in the final discussion, I pull all these refinements together.

INDIRECT SPEECH ACTS AND THEIR RESPONSES

My first goal is to lay out six major properties of indirect speech acts drawn from the philosophical and linguistic literature on the subject, propose a similar set of properties for their responses, and show how the two sets match. I will speak of A, a generic woman who performs the indirect speech acts, and B, a generic man who responds to her. They can be thought of as Ann and Bob.

Six Properties of Indirect Speech Acts

(1) Multiplicity of meanings. Direct speech acts are intended to have just one meaning, or illocutionary force. In uttering *It's raining out* as a direct speech act, A means simply "I assert to you that it is raining out." Indirect speech acts, according to Searle (1975), always have more than one meaning, or illocutionary force. In uttering *This soup needs salt* in the right circumstances, A may mean both "I assert to you that this soup needs salt" and "I request you to pass the salt." Let us call these meanings M_1 and M_2. M_1, which follows directly from the literal meaning of the

sentence, is generally called the speaker's literal or direct meaning. M_2 is generally called the indirect or conveyed meaning. M_1 and M_2 are not meanings of the sentence *This soup needs salt*. Rather, they are the two parts of what A means in uttering the sentence on this occasion. In Grice's (1957, 1968) and Schiffer's (1972) terminology, they are speaker meanings.

(2) Logical priority of meanings. The several meanings of an indirect speech act are not conveyed in parallel. In uttering *This soup needs salt,* A requests B to pass the salt *by virtue of* her assertion to him that the soup needs salt (Searle, 1975). So M_1 and M_2 form a chain of meanings in which M_1 is "logically prior" to M_2, or M_2 is "logically contingent" on M_1. We can refer to M_1 and M_2 as the initial and final meanings of such a chain.[1] Just because M_1 is *logically* prior to M_2, of course, doesn't necessarily imply that M_1 is *temporally* prior to M_2 in any psychological sense. These are two separate issues.

Most indirect speech acts have chains with just two meanings, but longer chains are common too. By uttering *Haven't you forgotten to clean your room?,* for example, A can use her literal question, M_1, to assert that B has forgotten to clean his room, M_2; she can use M_2 to convey another assertion, M_3, that she wants B to clean his room now; and she can use M_3 to request B to clean his room now, M_4. In an independent chain, she can also use M_2 to scold B for not having cleaned his room before, M_5. So there can be more than two meanings in a chain and even more than one chain.

(3) Rationality. The logical contingency between any two meanings of an indirect speech act, according to Gordon and Lakoff (1971), Heringer (Note 1), Searle (1975), and others, has a rational basis. For A to utter *This soup needs salt* and intend both M_1 and M_2, she must first assume that she and B "mutually know" certain background facts (see Lewis, 1969; Schiffer, 1972; Clark & Clark, 1979; Clark & Marshall, 1978, 1980). They may have to share the knowledge, for example, that they are at dinner, that she has just tasted the soup, that there is a salt-shaker near him, and other such facts. She must also observe certain principles of cooperative conversation (Grice, 1975). For one thing, her utterance must be relevant to what is going on at the moment. Finally, she must adhere to certain conventions about the use of sentences in performing direct speech acts. Only then can she be certain that B will be able to infer that she intended both M_1 and M_2.

(4) Conventionality. As part of this rationale, there are conventions

[1] M_1 and M_2 are called the secondary and primary illocutionary acts, respectively, by Searle (1975, p. 62). I have avoided these terms, which are difficult to extend to chains with more than two meanings (see later).

about which sentences can be used for which indirect speech acts. One convention of English is that A can indirectly request B to do a particular act by questioning his ability to do that act. A can request the salt, therefore, with *Can you reach the salt?*, *Are you able yet to pass the salt?*, and *Is it possible for you to pass me the salt?* This type of convention could be called a *convention of means*, since it specifies a semantic device by which an indirect speech act can be performed.

There are also *conventions of form*—conventions about the wording of indirect speech acts. *Can you pass the salt?* and *Could you pass the salt?*, for example, are highly conventional, or idiomatic, forms in English for requesting the salt. *Is it possible for you to pass the salt?* and *Are you able to pass the salt?* are less idiomatic, and *Is it the case that you at present have the ability to pass the salt?* is not at all idiomatic. So idiomaticity, an alternative term for conventionality of form, is a matter of degree. One piece of evidence for this continuum is that *please* can be inserted at many points in the highly idiomatic indirect requests but at fewer or no points in the less idiomatic ones (Sadock, 1972, 1974). What has come to be the most and least idiomatic forms in English is a result of historical processes, and so the same variation occurs in other areas of syntax and morphology too (Bolinger, 1975, 1976; Clark & Clark, 1979; Morgan, 1978). As Searle put it, there appears to be a conversational maxim that says: Speak idiomatically unless there is some special reason not to.

(5) Politeness. Why are there so many indirect speech acts? The main reason, perhaps, is politeness (Lakoff, 1973a, 1977; Brown & Levinson, 1978; Clark & Schunk, Note 2). Direct requests, for example, presume a certain status of A over B. If he and she are peers, she won't have that status, and so it would be impolite of her to make a bald request like *Loan me $100*. One solution for A is to give B options, or appear to give him options, with an indirect request like *Can you loan me $100?* If he doesn't want to loan her the money, he can duck out with *Sorry, I can't—I don't have that much right now*. Or A can reduce how imposing her request would be, for example, by asking permission to make the request, as in *May I ask you to loan me $100?* On the other hand, A can use *I want you to loan me $100*, which doesn't give options and does impose, to flaunt her authority over him.

(6) Purposefulness. Speech acts are purposeful. They are intended to have a specific effect on the addressee, such as to get him to believe that something is true (as with assertions) or to get him to do something (as with requests). How this is accomplished has been discussed by Grice (1957, 1968), Schiffer (1972), and others. The important point is that speakers ordinarily have goals they want to achieve; they formulate plans for achieving them; and they select their speech acts as parts of these plans. Listeners are intended to infer these speech acts in part by recog-

nizing these goals, these plans, and the roles the speech acts play within the plans (Perrault, Allen, & Cohen, 1978; Allen & Perrault, Note 3; Cohen, Note 4). So far, however, goals and plans have been used very little in explanations of indirect speech acts or their responses. Like Allen, Cohen, and Perrault, I believe they should.

Responses to Indirect Speech Acts

Responses to direct speech acts are, roughly, of three main types. First, there is the class of responses A intended B to give. When she asks him *When does the museum close tonight?,* she intends—that is, she *wants* and *expects*—him to produce an assertion that reveals the time the museum closes, as in *It closes at six* or *At six* or *Just before dark.* If B is fully cooperative and the circumstances are right, he will produce such a response. This class of responses I will call *expected responses.* Of course, A could be wrong in her presuppositions about the situation. If the museum is not open, B will say *It isn't open today.* If B doesn't know the answer, he will respond *Sorry, I don't know.* If B can't figure out which museum she is talking about, he will ask *Which museum?* These are cooperative responses, but not the expected ones, hence I will call them *cooperative but unexpected responses.* And there are a variety of *uncooperative responses.* These three types of responses are elicited by indirect speech acts too. It is the expected responses that I will be most concerned with, although I will touch on the other two types too. I will propose seven properties of such responses.

(1) Multiplicity of moves. Just as indirect speech acts have more than one meaning, their expected responses may contain more than one "move," to use Goffman's (1976) term. *Can you tell me what time it is?* may elicit *Yes, I can—it's six.* If M_1 is the literal question and M_2 the indirect request for the time, then the first move, *Yes, I can,* is an answer to M_1, and the second move, *It's six,* is a response to M_2. Let us call these $Move_1$ and $Move_2$. The point is that they correspond directly to the two meanings of A's indirect request. (Under (2) and (4), I will consider caveats to this notion.) Two-move responses like this are common enough. When Munro (Note 5) asked 61 students on the UCLA campus either *Can you tell me what time it is?* or *Can you tell me the time?,* 31 responded with both of these moves.

Expected responses may also contain more than two moves (see Goffman, 1976). Suppose A said to B *Do you remember who was asking something about Ben?,* intending M_1, "Do you remember the name?," M_2, "Who was asking?," and M_3, "What did that person ask about?," all in a chain. B's response may consist of three moves: *Yes; Veronica. She was asking where he was.* Each meaning in A's indirect speech act is matched by a move in B's response.

(2) Functions of moves. In actuality, expected responses are often cluttered with extra scraps of information. They may include not only moves that deal with A's intended meanings, but other moves as well. It is convenient to distinguish three functionally different kinds of moves—preliminary moves, expected moves, and added moves.

(a) Preliminary moves: To be cooperative, B must accomplish three things in his response (see Goffman, 1976, p. 300 on). First, he must give A immediate assurance he has received and understood her speech act; otherwise, *What?* or *I didn't hear you* is in order. Second, he must give her immediate assurance that her speech act is legitimate—that he doesn't think it is intrusive, stupid, or otherwise inappropriate. And third, he must deal with the content of the speech act itself as soon as feasible. Ordinarily, he can accomplish all three goals in a single move. For *What time is it?*, he can do it with *It's six.* But if he is delayed in understanding her or in getting the time, he may need to give one or both of these assurances in separate moves, as in *Uh—it's six* or *Let me see—it's six.* The moves *uh* and *let me see* are not necessary parts of the expected response, and so I will call them *preliminary moves.* They can be further classified according to their particular functions (see DuBois, 1974; Lakoff, 1973b; Munro, Note 5).

(b) Expected moves: The moves that specifically deal with A's meanings are the expected moves. For *Can you tell me what time it is?*, there may be two expected moves, *Yes, I can* and *It's six.*

(c) Added moves: For the direct question *Where is Ben?* with just the one meaning B may respond *In the house—he's been there ten minutes.* The first move, *In the house,* is an expected move since it deals with A's direct meaning. The second move, *he's been there ten minutes,* does not deal with any of A's meanings, hence I will call it an *added move.* For indirect speech acts like *Can you tell me what time it is?*, most added moves are tacked on after the expected moves, as in *Yes, I can—it's six—we'd better hurry.* However, they can be placed elsewhere too, as in *Yes, I can—I just got my watch fixed—it's six.*

(3) Order of moves. When there are two or more expected moves in a response, they must of course be spoken in a chronological order. How is that order determined? The *normal* order, as far as I can tell, is identical to the logical order of the corresponding meanings of the indirect speech act. *Can you tell me what time it is?*, for instance, conveys a question (M_1), which is logically prior to a request for information (M_2). The two expected moves in its response reflect this order: *Yes, I can—it's six.* The reverse order would be very odd indeed: *It's six—Yes, I can.*

The moves of a response can be twisted out of normal order, but only, apparently, for special purposes. Take *Can you give me a dollar?* In the response *Yes, I can—here you are,* the two expected moves are in normal

order. In *Here you are, but I can only lend it to you,* there are two similar moves in reverse order, but the second move isn't really an expected move. It merely qualifies how the dollar is to be given and is therefore an added move. And in *Here you are—I can give it to you because I just got paid,* there are also two moves in reversed order, but again the second move isn't really an expected move. It presupposes the literal answer and tells A why B has the ability. It too is an added move. My conjecture is this: The expected moves of a response always follow normal order; when they appear to be twisted out of order, they are always qualified in some way, making them added moves instead.

(4) Selection of moves. Not every expected response exhibits a move for each meaning of the indirect speech act. Which moves are selected, and why? These two questions are a major reason for the experiments I will report later.

For now consider what I will call the *minimum move rule:* An expected response always contains at least the move that responds to the final meaning of the indirect speech act. For *Can you tell me what time it is?,* the expected response can be *Yes, I can—it's six* or merely *It's six,* both of which have moves that respond to M_2. The expected response cannot be *Yes, I can,* which responds to M_1 alone. That would imply either that B didn't take A as meaning M_2—she was asking about his ability to tell her the time and nothing more—or that he was deliberately being uncooperative.

The minimum move rule has the same basis as the ordering principle for expected moves—logical priority. An expected response is one that deals, explicitly or implicitly, with *all* the meanings of the indirect speech act. The only move that can ever do that by itself is the move that responds to the final meaning in the chain. For *Can you tell me what time it is?,* the response *It's six* deals with M_2 explicitly, but it also implies that the answer to M_1 is yes. Providing the time logically entails being able to provide the time. The response *Yes, I can,* in contrast, answers M_1 explicitly but implies nothing about M_2 and so is not sufficient. Similar reasoning applies to the ordering of two expected moves. The second move must be informative above and beyond the first or else there is no reason to utter it. The second move is informative in this way in *Yes, I can—it's six,* but not in *It's six—yes, I can.* The basis for all this is logical priority. Since M_1 is logically prior to M_2 in this context, Move_2 may imply Move_1, but not vice versa.[2]

[2] According to the minimum move rule, the final move isn't necessarily sufficient to deal with all meanings. For *Can you remember who was asking something about Ben?* with its three meanings, Move_3 (*Where Ben was*) is not sufficient, since it doesn't imply who was asking, whereas $\text{Move}_2 + \text{Move}_3$ (*Veronica was asking where Ben was*) is.

There is one major caveat to the minimum move rule. Responses to many speech acts don't have to be verbal. A request to borrow a dollar may be responded to by a reach for the billfold, which shows the intention to comply. An assertion can be acknowledged with a nod, glance, or smile. Indeed, some speech acts may not require a discrete response at all. Assertions in long narratives, for example, seem to require B's continued attention and little else.

(5) Politeness. For many indirect speech acts, like *Can you tell me what time it is?*, it is logically adequate to respond with one move, *It's six.* Why would B ever respond with more, as in *Yes, I can—it's six,* which is unnecessarily redundant. According to a proposal by Clark & Schunk (Note 1), one reason is politeness. The response *Yes, I can—it's six* is normally taken to be more polite than *It's six.* For a variety of indirect requests tested in several experiments, two-move responses were judged more polite than one-move responses.

(6) Ellipsis. Responses to indirect—as well as direct—speech acts are ordinarily highly elliptical. For *Can you tell me what time it is?*, the first expected move could conceivably be *Yes, I can tell you what time it is,* but it would ordinarily be reduced to *Yes, I can* or merely *Yes.* The second expected move could likewise be *The time now is six o'clock,* but it would ordinarily be reduced to *It's six* or merely *Six.* Such ellipsis results in two-move responses like *Yes, it's six* or *Yes, six.* When is ellipsis chosen, and why? These are questions I will take up in the experiments that follow.

By now it should be clear that indirect speech acts and their responses form a special type of adjacency pair. When A takes her turn, she intends B to recognize not just her literal meaning M_1, but also (say) a second indirect meaning M_2. What is crucial here—and a point often missed—is that she *also* intends him to deal with both of these meanings in his very next turn. It isn't enough for him to recognize both and then deal only with the first. He must deal with both. Four main points in the correspondence between A's and B's turns are summarized in Table 1. On the left are four properties of the indirect request *Do you know what time it is?*, and on the right are the four matching properties of the expected response *Yes, I do—it's six.*

Yet this characterization is hardly complete. It is easiest to see this by looking at how B understands what A means and then plans his response.

UNDERSTANDING INDIRECT REQUESTS

How does B decide what to respond? Ordinarily, he must first try to understand what A meant. Different interpretations will lead him to make different moves in his response. Then he must decide what he intends to do based on this understanding—whether he wishes to be cooperative or

TABLE 1

Some Properties of the Indirect Request *Do You Know What Time It Is?* and Its Expected Response *Yes, I Do—It's Six*

Indirect request	Expected response
(1) Multiple meanings M_1 = "Do you know the time?" M_2 = "What time is it?"	(1) Multiple moves $Move_1$ = *Yes, I do* $Move_2$ = *It's six*
(2) Logical priority in meanings M_1 is logically prior to M_2	(2) Temporal order of moves $Move_1$ is temporally prior to $Move_2$
(3) Rationality of meanings M_1 is intended to imply M_2	(3) Selection of moves $Move_1$ isn't necessary; $Move_2$ is
(4) Politeness of request Including M_1 is polite	(4) Politeness of response Including $Move_1$ is polite

obstructive, or polite or rude, or what. My main concern is with B's understanding of what A meant. In studying this, I will limit myself to indirect requests conveyed by literal questions, as in *Can you tell me what time it is?* For these, the literal meaning will be called Q, for "question," and the indirect meaning R, for "request." I chose these requests since they lead to such readily identifiable moves as *Yes, I can* for Q and *It's six* for R.

Understanding the Literal and Indirect Meanings

When A makes an indirect request like *Can you tell me the square root of ten?*, she intends both the literal and the indirect meaning—both Q and R. At least, this is what Searle (1975) and others have argued. But this cannot be the whole story. Contrast these two situations. In situation 1, B has been looking up square roots in a table for A, and she continues, *Now can you tell me the square root of 10?* In this instance she is asking Q only to convey R. She doesn't intend Q to be taken seriously—she is certain he is *able* to tell her the square root, for he has the table in front of him and has been providing square roots earlier. She is asking him whether he can merely by way of being polite. In situation 2, B is sitting in an easy chair, reading the newspaper, and A, doing a mathematics problem, asks him, *Can you tell me the square root of 10?* Again she is requesting the square root of 10, but this time she is not using Q *merely* to convey R. She is asking Q seriously, since she believes B may well not be able to tell her the square root of 10. Her request is a conditional request. She asks B to tell her the square root of ten if he is able to do so.

Q therefore varies, I propose, in a property I will call *seriousness* (or its inverse *pro-formality*). In situation 1, Q is intended to be taken pro forma. In situation 2, Q is intended to be taken seriously. Since Q is a part of A's full speech act, the seriousness of Q is a property of the speech act. It

ought to have a counterpart, therefore, in the expected response to that speech act, and, I suggest, it does. When B takes A as intending Q pro forma, he believes he is *not* intended to respond to Q. In situation 1, he would normally respond simply *It's 3.16*. But when B takes A as intending Q seriously, he believes he *is* intended to respond to Q in a separate move. In situation 2, he would *both* answer Q *and* comply with R, as in *Yes, it's 3.16*. A serious Q gets an expected move in the response; a pro forma Q does not.

Before B can plan his response, he must decide whether Q was intended pro forma or seriously. In general, he won't be able to decide with certainty, since he has to rely on his perception of the situation—as in situations 1 and 2—and on other subjective factors. All he can do is use the evidence at hand to judge the probability that Q was intended seriously. Call this probability q. When B is completely certain Q is pro forma, $q = 0$; when B is completely certain Q is serious, $q = 1$; otherwise, q is somewhere between 0 and 1. How does B estimate q? This is one of the two main empirical questions to be investigated in the experiments that follow.

In trying to understand A's indirect meaning, on the other hand, B has two problems to solve. First, he must select from the many possible things A could mean indirectly the one she most likely meant on that occasion. Call this meaning R. He must then estimate how likely it was that she truly meant R. Because this depends on subjective judgments about the situation and other factors, that estimate can again be only a probability. Call that probability r. When B is absolutely certain A didn't mean R, $r = 0$; when he is absolutely certain she did mean R, $r = 1$; otherwise, r is between 0 and 1. How does B select R and estimate its likelihood r? This is the second main empirical question to be examined in the experiments to be reported.

A Response Model

If B is fully cooperative, he will select his response on the basis of q and r. For *Can you tell me the time?*, he will answer Q with *Yes, I can* when he judges q to be large, and respond to R with *It's six* when he judges r to be large. This will result in one of three responses: (1) *Yes, I can;* (2) *Yes, I can—it's six;* or (3) *It's six*. I will call these three responses, respectively, "answer alone," "answer-plus-information," and "information alone." Note that the fourth possibility—no response at all—is one B can never give, since he knows he is expected to respond in some way. Indeed, for every request I will report, people responded, except for a few clear misunderstandings or misfires, with one of these three responses. What this implies is that B cannot decide on his two moves independently of each other. How, then, does he decide? I will consider three plausible decision schemes.

Scheme 1 consists of two ordered decision rules:

Rule 1. Answer Q with probability q.

Rule 2. If Q was answered, respond to R with probability r; otherwise, respond to R with probability 1.

In this scheme, the responses answer alone, answer-plus-information, and information alone should occur, respectively, with probabilities $q(1 - r)$, qr, and $(1 - q)$. Given this scheme, it is possible to take a group of people's responses to a request and work backwards to discover the estimates of q and r on which their responses were based. Suppose that the responses answer alone, answer-plus-information, and information alone actually occurred for a group of people with proportions a, b, and c, where $a + b + c = 1$. It is easy to show that their responses were based on these estimates: $\hat{q} = a + b$, and $\hat{r} = b/(a + b)$. So for *Can you tell me the time?*, $\hat{q}$ is found by computing the proportion of people who responded *Yes, I can* with or without a second move, and $\hat{r}$ by computing the proportion of this subgroup who went on to respond *It's six.*

Scheme 2 is similar to Scheme 1, except that the two moves are decided on in the reverse order:

Rule 1. Respond to R with probability r.

Rule 2. If R is to be responded to, answer Q with probability q; otherwise, answer Q with probability 1.

This scheme leads to estimates of q and r from people's actual responses as follows: $\hat{q} = b/(b + c)$, and $\hat{r} = b + c$.

In Scheme 3 the two moves are decided on simultaneously according to the following two ordered rules:

Rule 1. Answer Q with probability q and, independently, respond to R with probability r.

Rule 2. If nothing results, return to Rule 1.

In this scheme q and r are estimated as follows: $\hat{q} = b/(b + c)$ and $\hat{r} = b/(b + a)$.

Which scheme is best? In the experiments to be reported, the patterns of q and r are so similar for the three schemes that it is empirically impossible to select one scheme over any other. The conclusions I will draw do not depend on which is selected. However, only in Schemes 1 and 2 is there the desirable statistical property that q and r are estimated from the data independently of each other (which does *not* imply, of course, that q and r are themselves independent). And only in Scheme 1 are the two moves decided on in the order in which they are spoken. For these and other reasons I will use Scheme 1.

B's responses, however, should change not only with how he thought A intended him to respond—the expected response—but also with his own

additional intentions. Take politeness, for example. For *Can you tell me what time it is?*, he might ordinarily respond as expected with *It's six*. But if he intends to be especially polite, he is more likely to respond *Yes, I can—it's six*. One way to view this is that he has set for himself a probability p of being completely polite. In Scheme 1, then, he would answer Q not with probability q as expected, but with probability $q + p(1 - q)$. Whenever he wanted to give merely the expected response, he would set $p = 0$ and respond *Yes, I can* with probability q. Whenever he wanted to enhance politeness half way, he would set $p = 1/2$ and respond *Yes, I can* with probability $(q + 1)/2$. And whenever he wanted to be utterly polite, he would set $p = 1$ and respond *Yes, I can* every time. Politeness can be treated in other ways too.

To take B's intentions into account, however, would require much more complicated models than could be tested here. For this reason, I have tried to hold the added intentions in these experiments constant; it is natural to assume that for any two requests in the same experiment they were roughly the same. In several places, however, I will note how these sorts of intentions could have affected people's responses.

The Experiments

In the five experiments I will report, I examined spontaneous responses to requests made by telephone. In each experiment a friendly sounding 23-year-old woman with a standard California accent would dial a local merchant's number, wait for the answer (typically *Hello*, or *Green's Pharmacy*, or *Green's Pharmacy, may I help you?*), say *Hi*, and then make a single request the merchant would normally be expected to deal with on the telephone. One typical conversation went like this (the name has been changed for anonymity):

Merchant:	Green's Pharmacy
Caller:	Hi. Do you close before seven tonight?
Merchant:	Uh, no. We're open until nine o'clock.
Caller:	Thank you very much. Goodbye.
Merchant:	Goodbye.

During and immediately after the conversation the caller wrote down verbatim the critical part between the request and *thank you*, noting all *uh*'s, hesitations, changes in speakers, and other interruptions.

The merchants were selected from the Yellow Pages of Palo Alto and other San Francisco area telephone books; the category of merchant varied from experiment to experiment. There were two to seven requests per experiment. Within a category, one merchant, chosen roughly at random, was asked the first request; the next one to six merchants listed were asked, in order, the remaining one to six requests; the cycle was repeated

until a set number of merchants had responded. The telephoning was done during a time of day appropriate to the merchant and the request. All wrong numbers, merchants out of business, and the like were excluded and replaced by the next merchant in the list. No merchant was called more than once in this series of experiments.

EXPERIMENT 1

Do responses to indirect requests vary at all? Although it has been noted that people sometimes *do* respond to the literal meaning of such requests as *Can you tell me what time it is?* (Green, 1975; Searle, 1975; Munro, Note 5), are there systematic differences in how often they do so? Unless there are, there is no reason to go on. The first issue of Experiment 1, then, is whether q and r vary systematically from one indirect request to the next.

On the assumption q and r do vary, how do merchants estimate them? What sources of information—in the caller's utterance or in the situation—do they use to decide how likely Q was intended seriously and how likely R was meant? In this experiment, I will take up three possible sources—conventionality of means, transparency of R, and obviousness of Q's answer.

Conventionality of Means

When A wants to make certain Q will be taken pro forma, I propose, she will want to use a conventional means. Compare *Could you tell me what time you close tonight?* and *Do you close before seven tonight?* Both can be used to request the closing time from a merchant. They differ in that the first uses a conventional means, and the second does not. In selecting the first over the second, all other things being equal, A signals to B that she is requesting the closing time and is asking Q merely to be polite. A's use of a conventional means, then, is evidence that Q may not be intended to be taken seriously—that B should estimate q to be small.

A's use of a conventional means is also evidence that R is probably intended. The point of using a conventional means to request something is to make certain B sees it as a request. So when a request is conventional, all other things being equal, r should be estimated at or near 1.00. When it is not conventional, it should be estimated at a lower value, with B relying on other factors in his estimating instead.

Transparency

The general form of a request R is this: "I (A) request you (B) to do act C." Example: *I request you to tell me what time you close tonight.* Indirect requests vary in how transparent the three elements A, B, and C are in what is literally said. *Could you tell me what time you close tonight?* is quite transparent, since A, B, and C are each explicitly mentioned. *Do*

you close before seven tonight?, used for making the same request, is less transparent, since B and only parts of C ("Tell me what time you close tonight") are specified. And for the same purpose, *Stores seem to close early now* is even less transparent, since A, B, and C are implicit. Specifying act C is probably the most important thing to make transparent, since A and B are always at least clear when A talks to B.

My proposal is this: All other things being equal, the more transparent R is, the lower the estimate of q and the higher the estimate of r. The logic goes like this. For A to make certain B will see exactly what request she is making, she must make that request transparent in what she says, especially as regards act C. On B's part, he knows that whenever she uses such a request, he can be more certain than otherwise that she intended R. And if she intended R, it is also less likely that she was seriously interested in an answer to Q. The result: a raised estimate of r, and a lowered estimate of q.

Transparency, however, is correlated with conventionality. Conventional requests tend to be quite transparent, whereas nonconventional ones do not. The connection is probably not accidental. When A wants to make certain B can figure out R precisely, she had better use a transparent indirect request, like *Can you tell me what time you close tonight?* This means that the indirect requests most likely to become conventional are the transparent ones. Indeed, in Experiment 1 there is no way of distinguishing between conventionality and transparency in their effects on q and r.

Obviousness of Q's Answer

Whenever B believes that the answer to Q is mutually obvious to A and B in the present circumstances, he should take A as *not* intending Q seriously and should fix the value of q near 0. If he believes that the answer is not mutually obvious, he should take Q as more likely to have been intended seriously and should estimate q to be larger than 0. The less obvious the answer, the closer q should be to 1. This point was illustrated earlier with situations 1 and 2 for the request *Can you tell me the square root of 10?* But like transparency, the obviousness of Q's answer is correlated with conventionality. Conventional requests tend to have obvious answers to Q, as in *Could you tell me what time you close tonight?*, and nonconventional requests do not. Historically there are good reasons for this correspondence too. So in Experiment 1, it will be impossible to distinguish conventionality from obviousness of Q's answer either.

Yet a small test of this proposal can be made by comparing *Could you tell me what time you close tonight?* and *Would you mind telling me what time you close tonight?*, which for the moment we may assume are equally conventional. It may be mutually obvious to the merchant and

caller that she believes he has the ability to tell her the closing time, but not quite so obvious that she believes he wouldn't mind. If so, Q should be taken seriously more often for *Would you mind?* than for *Could you?*

The five requests selected for this experiment, therefore, were the following:

(1) What time do you close tonight?
(2) Could you tell me what time you close tonight?
(3) Would you mind telling me what time you close tonight?
(4) Do you close before seven tonight?
(5) I was wondering whether you close before seven tonight?

For convenience, these will be abbreviated *What time?*, *Could you?*, *Would you mind?*, *Do you close?*, and *I was wondering*. Each request was asked of 30 merchants for a total of 150 merchants. For this purpose 30 categories of commercial shops were selected from the Yellow Pages with the constraint that the shops be rather small and likely to have regular closing hours—like florist shops, auto repair shops, and delicatessens and not banks, department stores, or plumbers. Five merchants were selected from each of the 30 categories for the five different requests.

For all five requests, R was intended to be "I request you to tell me what time you close tonight." *What time?* makes this request directly. It has no Q, no yes/no question. *Could you?* and *Would you mind?* have an obvious literal Q by which they make request R, and they use conventional means. *Do you close?* and *I was wondering* both use nonconventional means. Although *Do you close?* has an obvious literal Q, *I was wondering* conveys that same Q indirectly. The caller directly asserts that she is wondering something and by virtue of that assertion asks Q, "Do you close before seven tonight?", and by virtue of this Q makes request R. The assertion, of course, requires no verbal response, so the interest still lies in the merchants' responses to Q and R.

Results

The three main response categories and their percentages of occurrence are shown in Table 2. The answers to Q included the affirmative *yes, yeah, ya, uh huh,* and *sure* and the negative *no*. Affirmative and negative answers will be called *yes* and *no,* for short, except when the words themselves are of interest. *Okay* was *not* counted as an affirmative answer since it is really a promise to do what has been requested, as it is in response to the direct request *Open the door.* It occurred only once. The information provided in response to R included such expressions as *Six, At six,* and *We close at six,* and so the category "answer plus information" included such responses as *No, we close at nine.* The category marked "other" includes all responses that could not be categorized this

TABLE 2

Percentage of Merchants Giving Answers and Information to Five Requests in Experiment 1

Statement	Answer alone	Answer plus information	Information alone	Other
(1) What time? (30)[a]	0	0	97	3
(2) Could you? (30)	0	0	97	3
(3) Would you mind? (30)	0	23	70	7
(4) Do you close? (30)	13	57	27	3
(5) I was wondering? (30)	3	60	37	0

[a] Number of merchants asked each request indicated in parentheses.

way or were in some way uncooperative. Only 5 of 150 responses had to be put into this category.

Estimates of q and r. The estimates for each request are shown in Table 2. Recall that $\hat{q}$ is the proportion of merchants who answered Q. (This is calculated with the "other" responses excluded.) So for *Do you close?*, $\hat{q}$ is 13% + 57% as a proportion of 97%, or .72. And $\hat{r}$ is the proportion of the merchants who answered Q who also responded with information to R. So for *Do you close?*, $\hat{r}$ is 57% as a proportion of 13% + 57%, or .81. For *What time?* and *Could you?*, there were no answers to Q and so no way in Scheme 1 even to estimate r. For these two requests $\hat{r}$ was calculated by Scheme 2, which did allow an estimate. The differences between two proportions will be tested by one of three statistical tests, whichever is appropriate: (1) the usual test for differences in proportions, expressed in z scores; (2) a test of their arcsines, also expressed in z scores; or (3) a χ^2 test.

There is little question that q and r varied from request to request. Note first that there were no *yes* answers for the direct request *What time?* Merchants provided only the information requested, and so $\hat{q} = 0$. This

TABLE 3

Estimates of q and r for Five Requests in Experiment 1

Statements	Parameters	
	$\hat{q}$	$\hat{r}$
(1) What time?	.00	1.00[a]
(2) Could you tell me?	.00	1.00[a]
(3) Would you mind?	.24	1.00
(4) Do you close?	.72	.81
(5) I was wondering?	.63	.95

[a] These $\hat{r}$s are estimated by Scheme 2.

finding is important. It shows that *yes* and its kin aren't automatically used as mere time fillers or appropriateness markers. They are reserved for answers to Q. In the other requests, $\hat{q}$ varied from 0 to .72, and $\hat{r}$ varied from .81 and 1.00.

Conventionality was critical. As expected, the value of $\hat{q}$ was smaller for the conventional forms *Could you?* and *Would you mind?*, .00 and .24, than for the nonconventional requests *Do you close?* and *I was wondering?*, .72 and .63. The first two proportions are each significantly smaller than the second two ($z \geq 2.97, p < .002$). Also, as expected, $\hat{r}$ was 1.00 for the conventional requests, and smaller for the two nonconventional requests, .81 and .95. Together, the latter two values are significantly less than 1.00 ($z = 2.39, p < .01$); individually, only .81 is ($z = 2.22, p < .02$).

As for obviousness of Q's answer, Q was taken seriously more often for *Would you mind?* than for *Could you?*, .24 to .00. This difference is significant ($z = 2.79, p < .005$).

Ellipsis. The merchants' responses to R varied in ellipsis too. Sometimes they provided their information in complete sentences, like *We close at nine* or *That'd be at nine,* and sometimes in elliptical sentences, like *At nine* or *Nine o'clock.* For these experiments, I will define an elliptical sentence as one without an explicit subject (like *we*) or verb (like *close*) or both. Elliptical sentences were strongly preferred in response to *What time?, Could you?,* and *Would you mind?,* occurring 72, 79, and 79% of the time, respectively. But they were strongly avoided in response to *Do you close?* and *I was wondering,* occurring only 26 and 17% of the time, respectively. The first three percentages are each significantly larger than each of the last two ($z \geq 3.50, p < .001$). Furthermore, elliptical sentences were used more often when the information was provided alone than when it followed an answer to Q, 52 to 29%. These percentages are based on *Would you mind?, Do you close?,* and *I was wondering,* the only requests that elicited both categories of responses. This difference is also significant ($\chi^2(1) = 3.93, p < .05$).

Do you close? and *I was wondering* were apparently harder to comprehend than the rest, as suggested by the occasional sign of incomplete or delayed understanding. Some merchants requested a repeat with "What was that?" or "Pardon me?" Others requested clarification with "The time we close?" or "Before seven?" Both types required the caller to respond. Still other merchants repeated part of the request to themselves, such as "The time we close," as if they were trying to get the request straight before responding. These interruptions for clarification, as I will call them, occurred 14 and 17% of the time on *Do you close?* and *I was wondering,* but 0% of the time on the other three requests. The former two percentages are each significantly larger than the latter three ($z \geq 2.09, p < .02$).

Discussion

Indirect requests, then, do differ systematically in their q's and r's. For conventional requests, Q is seldom taken seriously, and R is always construed as having been meant. For nonconventional requests, Q is often taken seriously, and R is not always construed as having been meant. Yet neither of these findings can be attributed to conventionality alone, for the conventional requests were also the more transparent and had the more obvious answers to Q. One small piece of evidence that the obviousness of Q may have been important on its own, however, was that Q was taken seriously more often for *Would you mind?* than for *Could you?*

Would you mind?, however, poses a curious problem. Of the seven merchants who answered Q, only one said *no*. The rest answered *yes*.[3] (Actually, four said *yes*, one said *yeah*, and the sixth said *uh huh*.) The problem is this. If, as hypothesized, the reason these seven answered Q was because they thought it might have been intended seriously, they must have determined the import of Q. But if they had determined the import of Q, they should have answered *no*. What is wrong?

Three possibilities suggest themselves. First, merchants could have recognized that *Would you mind?* was a question and that Q was being used to convey R, but they didn't take in Q's content. But if so, why did *Would you mind?* elicit reliably more answers than *Could you?*, which presumably would be treated the same way? Second, merchants could have dealt with *Would you mind?* as in the first case, but considered it more polite than *Could you?* In reciprocating this greater politeness, they would have been more likely to answer Q. But in an unpublished experiment, 100 bank clerks were each asked *Could you tell me the time you close tonight?* For half the clerks the request was preceded by *I'm very sorry to bother you but*. Although the clerks reacted to this polite preface in other appropriate ways, they didn't increase their answers to Q by even 1%. So it doesn't seem plausible that *Would you mind?* by itself could have changed politeness enough to increase the answers to Q by 24%. Somehow the literal content of *Would you mind?* counts.

The third possibility is the one I prefer. Merchants could have taken the Q of *Would you mind?* as indirectly conveying an intermediate link in the chain, Q', "Will you tell me what time you close tonight?", which in turn indirectly conveyed R. What they were answering, then, was not Q but Q', which takes the answer *yes*. Note how convenient this Q' is. Virtually every other indirect request of this kind—*Can you?, Can't you?, Could*

[3] In an informal experiment in which 135 students each asked a student on the Stanford University campus *Would you mind telling me the time?*, there were 37 affirmative and 26 negative answers to Q, with $\hat{q} = .52$. The merchants' yesses, then, do not appear to be a conspiracy of chance.

you?, Will you?, Won't you?, Would you?, Shouldn't you?, May I ask you?, and the like—requires the answer yes. By interpreting Q as conveying Q', merchants could rely on a general response strategy in which they answer the Qs of all conventional requests of this sort by *yes*. This strategy would be particularly useful when they have to plan their responses quickly. Under more deliberate circumstances, they might prefer to answer Q instead, as in *No* and *Not at all*. Whatever the explanation, this result emphasizes that *Would you mind?* is a conventional request whose Q is not often construed as having been intended seriously.

Another curious problem can be illustrated for *Do you close?* When merchants answered its Q with *Yes, we do,* they had also given a partial response to R. Information that the shop closes before seven is partial information about the time it actually closes. Many merchants, it might be thought, should therefore not see it necessary to respond to R with a move like *We close at six*. Yet they did—88% of them for *Do you close?* and *I was wondering* combined. So when they took R to be intended, they took their task as providing full and not partial information about R.

As for ellipsis, why were elliptical sentences used so rarely for *Do you close?* and *I was wondering?* One obvious possibility is transparency. Note that the answer to *What time do you close?* has a regular elliptical form—*Nine* or *At nine*. When this question is embedded syntactically in the requests *Could you tell me what time you close?* and *Would you mind telling me what time you close?*, it should allow the same ellipsis. It isn't surprising to find ellipsis 75% of the time for these three requests. *What time do you close?*, however, is not embedded syntactically within *Do you close?* or *I was wondering*. For them it isn't available to "trigger" an elliptical response, and so it isn't surprising to find ellipsis only 20% of the time. But since both these requests are also nonconventional, we cannot tell whether ellipsis is triggered by the transparency of R, the conventionality of the request, or both.

EXPERIMENT 2

While Experiment 1 demonstrated that q and r vary, it only suggested why they might vary. Experiment 2 was designed to pull apart some of these reasons—in particular, obviousness and transparency independent of conventionality.

The requests selected were the following:

(1) Could you tell me the time you close tonight?
(2) Could you tell me the price for a fifth of Jim Beam/Chivas Regal?
(3) Do you have a price for a fifth of Jim Beam/Chivas Regal?
(4) Does a fifth of Jim Beam cost more than $5/$6?

These will be abbreviated *Could you time?, Could you price?, Do you*

have?, and *Does a fifth?* Each request, counting the two forms of *Could you price?*, *Do you have?*, and *Does a fifth?* separately, was asked of 50 liquor merchants in the San Francisco Bay area for a total of 350 merchants. The two forms of *Could you price?* and *Do you have?* were intended to tax the merchants to different degrees in order to change their assessments of the seriousness of Q. Since Jim Beam is commoner than Chivas Regal, I assumed that the merchants would have the price of Jim Beam more readily available. Since the results revealed no differences between them, the two requests of each pair will be combined and spoken of as if they asked only about Jim Beam. The two forms of *Does a fifth?* were meant to elicit *yes* and *no*, respectively; because of California's so-called fair price law then in effect, almost all stores sold Jim Beam at from $5.59 to $5.79 a fifth. For most analyses, the two forms make little difference, so they will be merged too, except when the difference is of interest. For these requests Q is assumed to be the literal question. R was intended to be "I request you to tell me what time you close tonight" for *Could you time?*, and "I request you to tell me the price of a fifth of Jim Beam" for the rest.

As in Experiment 1, the conventional requests should differ from the nonconventional ones. *Could you time?*, *Could you price?*, and *Do you have?* are each conventional forms for making requests, and *Does a fifth?* is not. R should be taken to be meant virtually always for the first three, with r's at or near 1.00, but not for the fourth, where r need not be so large. And on the average, Q should be taken seriously less often for the conventional than for the nonconventional requests, with q smaller for the former than for the latter. Once again, however, the conventional requests are on the whole also the more transparent and have the more obvious answers to Q, so conventionality cannot be distinguished in this way from transparency or obviousness.

Yet among the conventional requests, *Could you price?* and *Do you have?* seem to differ in transparency. *Could you price?* is a conventional and highly transparent means of request. *Do you have?* is also a conventional means of request. One can question the possession of an object in order to request that object, as in *Do you have a match?*, *Do you have a copy of the Times?*, or *Do you have a watch?* (where, however, the time and not the watch is being requested). But *Do you have?* isn't fully transparent. It doesn't say what the merchant is to do with the price. By the argument offered in Experiment 1, merchants therefore ought to estimate q to be higher for *Do you have?* than for *Could you price?* If she had wanted the price and nothing more, she would have used the more transparent form. Since both requests are highly conventional, on the other hand, merchants ought to estimate r to be at or near 1 for both.

The contrast between *Could you time?* and *Could you price?* seems to

TABLE 4

Percentage of Liquor Merchants Giving Answers and Information to Four Requests in Experiment 2

Request	Answer alone	Answer plus information	Information alone	Other
(1) Could you tell me time? (50)[a]	2	6	92	0
(2) Could you tell me price? (100)	0	15	77	8
(3) Do you have a price? (100)	2	37	49	12
(4) Does a fifth cost more? (100)	22	31	46	1

[a] Number of merchants asked each request indicated in parentheses.

offer a relatively clear test of obviousness. The only difference between these two requests is in what is requested, and that in turn should lead to a difference in obviousness of Q's answer. A merchant should assume that it is mutually quite obvious to the caller and him that he should be able to tell her the time the store closes. He should not assume, however, that it is obvious he should be able to tell her the price for Jim Beam. He may not remember it; he may not carry it; or he may not be allowed to give it out over the telephone, as several merchants actually said. In brief, Q's answer should be more obvious for *Could you time?* than for *Could you price?*, and q should be correspondingly smaller.

Results

These predictions were generally confirmed. The percentages of the three categories of responses are shown in Table 4, and the values of $\hat{q}$ and $\hat{r}$ in Table 5. To be counted as an answer alone, the response had to be yes—or no for *Does a fifth of Jim Beam cost more than $6?* The merchant had to have the option of telling the time or price. The few refusals that occurred (like "No, we don't give our prices out on the phone") were relegated to the "other" category along with misunderstandings (like "Yes, we've got fifths" to *Do you have?*) and other failures ("Sorry we,

TABLE 5

Estimates of q and r for Four Requests in Experiment 2

Statement	Parameters	
	q̂	r̂
(1) Could you tell me the time?	.08	.75
(2) Could you tell me the price?	.16	1.00
(3) Do you have a price?	.44	.95
(4) Does a fifth cost more?	.54	.58

don't have Jim Beam in fifths right now"). These failures, though interesting, were too rare to study here; I will take them up in Experiment 5.

Estimates of q and r. In responding to R, the merchants followed conventionality very closely. For the conventional requests *Could you time?*, *Could you price?*, and *Do you have?*, $\hat{r}$ was .75, 1.00, and .95 (based on 4, 15, and 39 responses, respectively). As expected, these values do not differ significantly from 1.00 either together or separately. (The .75 estimate for *Could you time?* was the result of a single merchant saying *yes* alone; by Scheme 2, $\hat{r}$ is .98.) For the nonconventional *Does a fifth?*, on the other hand, $\hat{r}$ was .58 (based on 53 responses). This is well below 1.00, as expected, and significantly smaller than either 1.00 or .95 for *Could you price?* and *Do you have?* ($z \geq 3.53$, $p < .001$).

The answers to Q were expected to follow a more complex pattern, and they did. As predicted on the basis of transparency, $\hat{q}$ was larger for *Do you have?* than for *Could you price?*, .44 to .16. This difference is significant ($z = 4.10$, $p < .001$). As expected on the basis of obviousness, q was larger for *Could you price?* than for *Could you time?*, .16 to .08. This difference, however, is only marginally significant ($z = 1.39$, $p < .08$). And as expected on the basis of conventionality, $\hat{q}$ was larger on the average for *Does a fifth?* than for the three conventional requests. Its value of .54 is significantly larger than the $\hat{q}$'s for *Could you time?* and *Could you price?* ($z \geq 5.50$, $p < .001$), but only marginally larger than the $\hat{q}$ for *Do you have?* ($z = 1.37$, $p < .09$).

There is further quite unexpected evidence that Q was construed differently for the conventional and nonconventional requests. The 85 affirmative answers to Q in this experiment took four forms: 34 were *yes;* 36 were *yeah* or *ya;* 12 were *sure;* and three were *uh huh.* (The 23 negative answers to *Does a fifth?* were all *no*). Of these four affirmative answers, *yes* is the most formal, while *sure, yeah,* and *uh huh* are all slangier and more informal. As it happened, *yes* was reserved mainly for the nonconventional *Does a fifth?* Of all the affirmative answers to each request, *yes* made up 25% for *Could you time?*, 20% for *Could you price?*, 25% for *Do you have?*, but 70% for *Does a fifth?* These percentages are based on 4, 15, 36, and 30 affirmative answers, respectively. The 70% figure for *Does a fifth?* is significantly larger than the 20 and 25% figures for *Could you price?* and *Do you have?* ($z \geq 3.18$, $p < .002$, two-tailed), respectively, but there were too few observations on *Could you time?* for that difference to be significant ($z = 1.69$, $p < .09$). In Experiment 1, by comparison, there was also a high percentage of *yes* answers for the two nonconventional requests, *Do you close?* and *I was wondering,* with 67% for each. It was as if when the request was not conventional, the caller was often taken to be interested in Q, which should therefore be answered with the more formal *yes.*

TABLE 6

Percentage of Elliptical Responses for Information Provided for the Four Requests in Experiment 2

Request	Answer plus information	Information alone	Total
(1) Could you tell me time?	100	72	73
(2) Could you tell me price?	33	64	59
(3) Do you have a price?	38	61	51
(4) Does a fifth cost more?	23	22	22
Totals	34	56	50

Ellipsis. Elliptical moves for R were common. Their percentages are shown in Table 6. As in Experiment 1, there was more ellipsis when the information was provided alone than when it was provided along with an answer to Q, 56 to 34%. This difference is significant ($\chi^2(1) = 11.18$, $p < .001$). The reversal of this trend for *Could you time?*, the 100% figure, is based on only three responses. Thus, while elliptical responses like *$5.59* were preferred to full responses like *It costs $5.59*, full responses like *Yes, it costs $5.59* were preferred to elliptical responses like *Yes, $5.59.*

The four requests, however, varied in how readily they were responded to elliptically. The percentages of elliptical responses in the answer-plus-information column in Table 5 didn't vary significantly among the four requests, probably because they are based on so few responses. The percentages in the information-alone column did. For the first three requests, the percentages hovered around 65%, but for *Does a fifth?*, the percentage was 22%, which is significantly smaller than the other three ($z \geq 3.86$, $p < .001$). So, as in Experiment 1, the merchants eschewed ellipsis on the request that was nonconventional.

The merchants showed many more signs of difficulty in understanding in Experiment 2 than in Experiment 1. Interruptions for clarification—requests for repeats, requests for clarification, and self-clarifications—occurred 14% of the time on *Could you time?*, but 59, 65, and 62% of the time on the other three requests. To get things straight for the latter requests, the merchants had to register that the caller wanted the price, not the availability, of a fifth, not a quart or half-gallon, of Jim Beam, not Jack Daniels or Cutty Sark. Furthermore, every merchant knew the closing time without checking, but 36% of them had to leave the telephone to check on the price of whiskey. This checking happened equally often for the three requests.

Discussion

As in Experiment 1, conventional and nonconventional requests be-

haved quite differently. As expected, R was taken to be meant almost invariably for the three conventional requests and less often for the nonconventional one. Also as expected, Q was taken seriously less often for the conventional than for the nonconventional requests. As in Experiment 1, however, these findings cannot be attributed solely to conventionality, transparency, or obviousness, since the conventional and nonconventional requests differ from each other in all three ways.

Transparency and obviousness, however, were tested independently of conventionality in this experiment. As expected on the basis of transparency, Q was taken seriously more often for *Do you have?*, in which R isn't fully transparent, than for *Could you price?*, in which it is. And as expected on the basis of obviousness, Q was taken seriously somewhat more often for *Could you price?* than for *Could you time?* This fits the idea that the less obvious Q's answer, the more likely Q was meant seriously.

The last result, however, is problematic. For one thing, it is only marginally significant. For another, it is subject to an alternative account. Recall that when the merchants were asked *Could you time?*, they could all say *yes* and provide the time immediately. But when asked *Could you price?*, 36% of them had to excuse themselves from the telephone, check on the price, return, and then give it. Of the 15 who answered *yes* to this request, 10 left the telephone with such responses as "Yes, hold on a second" and "Sure, just a moment." So these merchants who answered Q may have done so not because its answer was less obvious, but because they wanted to acknowledge they had heard and accepted the request before leaving the telephone. On the other hand, they could have acknowledged the requests with a mere "Hold on a second" or "Just a moment," as many other merchants did. So the alternative account is problematic too. In any case, these interruptions do not affect the comparisons among *Could you price?*, *Do you have?*, and *Does a fifth?*, which were equally often subject to these interruptions.

One striking finding was that the formal *yes* was reserved mainly for the nonconventional request *Does a fifth?*, while the slangier *yeah*, *sure*, and *uh huh* were reserved mainly for the three conventional requests. Why? It cannot be because *yes* indicates a greater certainty of answer. Surely the answers to the three conventional requests are more certain because they are fore-ordained to be affirmative. A more plausible explanation is that *yes* indicates seriousness of answer. While the Q's for the three conventional requests are generally not intended to be taken seriously, the Q for the nonconventional request is. So the answer to this serious Q is invested with the seriousness it deserves, which is provided by the formal *yes*.

The ellipsis in Experiment 2 bore a strong resemblance to that in Experiment 1. Elliptical responses to R were common for *Could you*

time?, Could you price?, and *Do you have?,* but rare for *Does a fifth?* This could be put down to conventionality—the first three are conventional and the last one isn't. It could also be put down to transparency—the first three are relatively transparent compared to the last one. Or it could be put down to both. At this point we cannot be certain.

EXPERIMENT 3

In Experiments 1 and 2, there was the suggestion that the conventionality of a request may be important to the interpretation of Q and R, but the evidence was far from conclusive. Each comparison of conventional and nonconventional requests was obscured because the conventional requests also had the more transparent R's and the more obvious answers to Q. Experiment 3 was designed to remedy this problem and test for the influence of conventionality uncontaminated by these other two factors.

For this purpose I turned to conventionality of form, or idiomaticity, in selecting the following three requests.

(1) Can you please tell me what the interest is on your regular savings account?

(2) Can you tell me what the interest is on your regular savings account?

(3) Are you able to tell me what the interest is on your regular savings account?

These will be abbreviated *Can you please?, Can you?,* and *Are you able?* Each request was asked of 50 clerks of San Francisco area branch banks for a total of 150 clerks. In each case, Q was intended to be the literal question asked, and R was intended to be "I request you to tell me what the interest is on your regular savings account."

All three requests rely on the same conventional *means* of making a request: Each asks a question with the literal meaning "Do you have the ability to tell me what the interest rate is?" They differ in conventionality of *form. Can you?* is the idiomatic form of expressing this means, whereas *Are you able?* is not. Note, for example, that *Can you?* readily accepts *please,* whereas *Are you able?* does not. When the caller selects the idiomatic form, she says, in effect, "I'm using this question pro forma to make a request. You aren't intended to take Q seriously." When she selects the nonidiomatic form, which emphasizes the literal question, she signals that she may well be interested in knowing whether the clerk has the ability to tell her the interest rate. So the nonidiomatic *Are you able?* should lead to a larger q than the idiomatic *Can you please?* and *Can you?,* although all three forms should virtually always be taken as meaning request R.

TABLE 7

Percentage of Bank Clerks Giving Answers and Information to Three Requests in Experiment 3

Request	Answer alone	Answer plus information	Information alone	Other
(1) Can you please tell me? (50)[a]	0	8	92	0
(2) Can you tell me? (50)	0	16	84	0
(3) Are you able to tell me? (50)	4	30	64	2

[a] Number of clerks asked each request indicated in parentheses.

Can you please? was designed to test another factor. Ordinarily, *please* is used to signal, or mark, requests, as in *Tell me please what the interest rate is.* When it is appended to *Can you?*, it should be a further signal that Q was not intended to be taken seriously—that Q is being uttered pro forma. And if there are any doubts about whether or not R was intended, *please* should scotch those doubts too.

Results

The results fell out as predicted. The three response categories and their percentages of occurrence are shown in Table 7, and the corresponding estimates of q and r are shown in Table 8. As expected, Q was taken seriously more often for the nonidiomatic than for the idiomatic forms. It was answered by 35% of the relevant clerks for *Are you able?*, but by only 12% of them for *Can you please?* and *Can you?* The $\hat{q}$ of .35 is significantly larger than the $\hat{q}$ of .12 ($z = 3.11, p < .001$); it is also significantly larger than the $\hat{q}$'s of .16 and .08 taken separately ($x \geq 2.70$, $p < .02$). As expected, Q was also taken seriously more often for *Can you?* than for *Can you please?*, where Q was answered by 16 and 8% of the clerks, respectively. These two values, however, are based on only 12 clerks altogether, and so the difference isn't quite significant ($z = 1.23, p < .11$). With more respondents it might prove to be reliable. And as expected, R was taken as having been intended by all of the clerks for *Can you please?* and *Can you?* and by all but two of them for *Are you able?* All three values of $\hat{r}$ were at or near 1.00 and don't differ significantly.

TABLE 8

Estimates of q and r for Three Requests in Experiment 3

Request	Parameters	
	$\hat{q}$	$\hat{r}$
(1) Can you please tell me?	.08	1.00
(2) Can you tell me?	.16	1.00
(3) Are you able to tell me?	.35	.88

TABLE 9
Percentage of Elliptical Responses for Information Provided for the Four Requests in Experiment 3

Request	Answer plus information	Information alone	Total
(1) Can you (please)?	50	66	64
(2) Are you able?	20	47	38
Totals	33	61	56

The elliptical responses to R fell into a neat pattern too. Their percentages are shown in Table 9; *Can you please?* and *Can you?* have been combined since between them there were only 12 responses in the answer-plus-information category. The two conventional forms led to ellipsis 64% of the time, whereas the nonconventional form led to ellipsis only 38% of the time. This difference is significant ($z = 2.94, p < .002$); the difference is also significant when *Can you please?* and *Can you?* are each compared with *Are you able?* ($z \geq 1.97, p < .025$). As in Experiments 1 and 2, there was also more ellipsis for the information-alone category than for the answer-plus-information category, 61 to 33%. This difference is also significant ($\chi^2(1) = 5.69, p < .01$), and it is consistent across the three requests.

Discussion

Conventionality of form matters. Fewer bank clerks took Q seriously when the request was idiomatic than when it wasn't. Even fewer took Q seriously when the idiomatic form had *please* appended. The clerks made these adjustments while still generally taking these forms as conveying R. So with *Can you?*, listeners are ready to believe that the speaker is requesting information and nothing more. With *Are you able?*, they are more reluctant to do so.

These results also yielded a test of conventionality of form as a source of ellipsis. A priori, there are no syntactic grounds for thinking that the three requests should differ in elliptical responses to R. They are equally transparent to R. All three contain the same WH- question, *What is the interest on your regular savings account?*, embedded as a complement within virtually the same form of yes/no question, *Can you tell me X?* and *Are you able to tell me X?* Yet the three forms did differ. The two idiomatic forms led to ellipsis 64% of the time; the less idiomatic form did so only 38% of the time, a large difference. Since the forms do not differ in conventionality of means or in transparency of R, the cause of this difference must be the conventionality of form. The clearer it is that Q is merely pro forma, the readier a respondant is to provide the information to R elliptically.

One point should be noted here. While these findings show the influence of conventionality of form, they do not bear directly on the influence of conventionality of means, which is what was at issue in Experiments 1 and 2. Indeed, there may be no "pure" test for conventionality of means, since it is almost always correlated with transparency and obviousness. Yet these results suggest that conventionality of means is likely to be a contributing factor to Experiments 1 and 2 above and beyond transparency and obviousness.

EXPERIMENT 4

Experiments 1, 2, and 3 have been mainly concerned with the way indirect requests are expressed linguistically. It was important whether or not the request was conventional in means, was conventional in form, had a transparent R, and was marked with *please*. Another factor that was possibly important was how obvious the answer to Q was in context. With obviousness entered the first major nonlinguistic factor, the fit between A's speech act and the situation in which it was performed. Experiments 4 and 5 were designed to broaden this half of the enterprise. In particular, they bring in A's goals and plans in saying what she did.

Experiment 4 was intended to be a modest demonstration of how the interpretation of a request changes with the manifest reasons for its having been made. The request *Does a fifth of Jim Beam cost more than $5?* was asked of 100 San Francisco area liquor merchants (none the same as in Experiment 2). It was preceded for half of them by one preamble and for the other half by a second preamble. The two preambles were intended to suggest different reasons for the request. The caller's first turn on the telephone, after *Hi,* took one of these two forms:

(1) I want to buy some bourbon. Does a fifth of Jim Beam cost more than $5?

(2) I've got $5 to spend. Does a fifth of Jim Beam cost more than $5?

These two preambles will be abbreviated *Some bourbon* and *Five dollars*. The first was intended to be relatively neutral and uninformative, giving little reason for the caller's request other than the obvious one. *Five dollars* was intended to give more cause for taking Q seriously. It strongly suggests that the caller, because she has only $5 to spend, truly wants to know whether or not she can buy a fifth of Jim Beam with it. Let us consider Q to be the literal question and R to be a request for the price of Jim Beam. Then Q ought to be taken seriously more often for *Five dollars* than for *Some bourbon*. How often R should be taken to have been meant should change little if any.

Results

These predictions were borne out. The three response categories and

TABLE 10

Percentages of Liquor Merchants in Experiment 4 Giving Answers and Information to *Does a Fifth of Jim Beam Cost More than $5?* When Preceded by Two Preambles

Preamble	Answer alone	Answer plus information	Information alone	Other
(1) Some bourbon (50)[a]	28	20	48	4
(2) Five dollars (50)	32	34	32	4

[a] Number of merchants asked each request indicated in parentheses.

their percentages are shown in Table 10, and the estimates of q and r are shown in Table 11. As expected, $\hat{q}$ was larger for *Five dollars* than for *Some bourbon,* .67 to .50. This difference, though not large, is significant ($z = 1.74, p < .05$). The difference between the $\hat{r}$'s of .42 and .52 is not ($z = .75$). As a check on the consistency of these two differences, $\hat{q}$ and $\hat{r}$ were also computed according to Scheme 2. Then $\hat{q}$ is still larger for *Five dollars* than for *Some bourbon,* .52 to .29, and the difference is still significant ($z = 1.84, p < .05$). The direction of $\hat{r}$ reverses, .71 to .67, which is further evidence that r doesn't differ much between the two preambles.

The elliptical responses to R revealed little of interest, since the request itself, *Does a fifth?*, allows little ellipsis in the first place. *Some bourbon* and *Five dollars* each led to ellipsis 18% of the time, and there were no differences between the answer-plus-information and information-alone categories.

Discussion

It isn't surprising that the interpretation of an utterance should change with the manifest reasons for it. But the change induced by the two preambles in this experiment is different from most kinds of change. Typically, one literal meaning is used in different circumstances to convey different *indirect* meanings. But what changed in Experiment 4 was the *literal* meaning Q—how often it was thought to have been intended seri-

TABLE 11

Estimates of q and r for the Two Preambles in Experiment 4

	Parameters	
Preamble	$\hat{q}$	$\hat{r}$
(1) Some bourbon	.50	.42
(2) Five dollars	.67	.52

ously. In short, the manifest reasons for an utterance can affect both direct and indirect meanings.

EXPERIMENT 5

While the caller in Experiment 4 made her reasons for calling explicit, ordinarily she would not. Instead, she would count on the merchant considering what she said along with the circumstances in which she said it to decide what she meant. But which circumstances, and how are they used to raise or lower *q* and *r*? For merchants to combine contextual information with the factors already noted, they must have in their possession a powerful principle of organization. That principle, the evidence suggests, is the merchant's conception of the caller's goals and plans in saying what she said (see Charniak, 1977; Lehnert, 1977; Schank & Abelson, 1977; Allen & Perrault, Note 3; among others).

How does a merchant infer the caller's goals and plans, and how does this conception determine his interpretation of her utterance? Experiment 5 was designed to examine these issues in detail. Four requests were selected.

(1) Do you accept Master Charge cards?
(2) Do you accept American Express cards?
(3) Do you accept credit cards?
(4) Do you accept any kinds of credit cards?

These will be abbreviated *Master Charge?, American Express?, Credit cards?,* and *Any kinds of credit cards?* Each request was asked of 50 restauranteurs in and around Palo Alto for a total of 200 respondents. Fast food restaurants and restaurant chains were excluded from the sample.

For each request Q is the obvious literal question, and R is stipulated to be "I request you to tell me the names of *all* the credit cards you accept." The restauranteur who responded to any of these requests "Yes, we accept all major credit cards" both answered Q and responded to R. When a restauranteur did not spontaneously name all the credit cards he accepted, he was asked one of two follow-up questions. For *Master Charge?* and *American Express?,* he was asked *Do you accept any other credit cards?;* for the other two requests, he was asked *Which credit cards do you accept?* The caller always made sure she found out which credit cards the restaurant did accept. Since the first of these follow-up questions is similar to the other four requests, it will be treated as if it were an independent fifth request, abbreviated *Any other credit cards?:*

(5) Do you accept any other credit cards?

Yet it should be kept in mind that this was always a follow-up to a *yes* answer to *Master Charge?* or *American Express?*

The Caller's Plan

In the Palo Alto restaurant world there are five credit cards: Visa (formerly BankAmericard, and often referred to as such), Master Charge, American Express, Diner's Club, and Carte Blanche. These were accepted, respectively, by 72, 71, 38, 12, and 10% of the restaurants in our sample. These percentages probably reflect card ownership. Indeed, it is probably mutual knowledge to restauranteurs and customers that there are about five credit cards, that Visa and Master Charge are the most widely owned and accepted, that Diner's Club and Carte Blanche are the least widely owned and accepted, and that many restaurants accept no credit cards at all.

Why would a caller ask the restauranteur whether he accepted credit cards? He would assume she has a hierarchy of goals. As one goal, she wants to decide whether or not to eat at the restaurant, probably that night. As a subgoal, she wants to know how to pay for the meal. As a subgoal to that, she wants to know if she can pay with any of the credit cards she owns. As next subgoal, she wants to discover whether any of the cards acceptable to the restaurant matches any of hers.

It is the next subgoal down that is critical, for the caller must concoct a plan that will bring out the name of one of her credit cards as efficiently as possible. Her plan will depend on the credit cards she owns. Consider these four cases.

The caller owns exactly one credit card, a Master Charge card. She wants to know whether it is accepted regardless of which others are. To find out efficiently, she should be specific: *Do you accept Master Charge cards?* To ask *Credit cards?* or *Any kinds of credit cards?* would be less efficient. If the merchant answers yes alone, she still has to ask *Master Charge?* If he lists all his acceptable credit cards, she will get a lot of extra information. And to ask *American Express?* would be odd, since a yes answer does not imply he accepts Master Charge cards, and he is unlikely to list the credit cards he accepts. In short, the caller should ask *Master Charge?*

The caller owns two credit cards, Master Charge and Diner's Club. One way to proceed is to ask about the cards in turn, first about the commoner Master Charge and then, if that fails, about Diner's Club. Another way is to ask *Do you accept Master Charge or Diner's Club?* As before, it would be odd to ask *American Express?* But what about *Credit cards?* or *Any kinds of credit cards?* For the first, if the merchant says yes alone, she would have to follow up with specific questions about Master Charge and Diner's Club cards. This is obviously less efficient than the first two routes. But by asking *Any kinds of credit cards?,* which explicitly mentions that there are various kinds of credit cards, she implies that she is interested in specific kinds of credit cards, not just credit cards in general.

This is likely to get a listing of the acceptable credit cards without a follow-up question. So while *Master Charge?* and *Do you accept Master Charge or Diner's Club cards?* are the most efficient, *Any kinds of credit cards?* would probably do the trick too.

The caller owns three credit cards, Master Charge, American Express, and Diner's Club. By now it would be rather inefficient to ask about these cards one at a time, or to ask *Do you accept Master Charge or American Express or Diner's Club?* The first would take too long, and the second would be too tedious if there is a chance no credit cards are accepted at all. For the reasons given before, the most efficient route would be to ask *Any kinds of credit cards?* That would get a quick no if no cards were accepted, and a listing of credit cards if some were. *Credit cards?* is also a possibility. It too would get a quick no if no cards were accepted, and it would be easy to follow up with *Master Charge?* or *American Express?*, the commonest of the credit cards she owns, if the answer was yes. So the caller should ask *Any kinds of credit cards?*, or perhaps *Credit cards?*, but not *Master Charge?* or *American Express?*

The caller owns all five credit cards. Her most efficient strategy would be to ask *Credit cards?*, since it doesn't matter which cards are accepted as long as one is. To ask *Any kinds of credit cards?* would imply concern about specific credit cards and might get a listing of the acceptable ones, which is too much information. And to ask about specific credit cards would be particularly inefficient. She should therefore ask *Credit cards?*, or possibly *Any kinds of credit cards?*, but not *Master Charge?* or *American Express?*

To infer her specific plan, the restauranteur can work backwards from her choice of noun phrase. Her most obvious choices are these, and the inferences he can draw from them follow.

(1) *Master Charge card.* Caller owns this card and perhaps one other.
(2) *Master Charge or Diner's Club cards.* Caller owns these two cards and perhaps one other.
(3) *Any kinds of credit cards.* Caller owns all but one or two cards.
(4) *Credit cards.* Caller probably owns all five cards.

The restauranteur draws these inferences in part by realizing—implicitly—which noun phrases the caller could have chosen but didn't. By selecting *credit cards*, for example, she doesn't own just one or two cards, for she would have mentioned them explicitly, using (1) or (2). Nor does she own just three, for she would have indicated interest in specific cards, as in (3). Hence she probably owns all five.

The restauranteur can use these predictions to decide what the caller meant by her utterance: whether she intended Q seriously; what R must be, if anything; and whether R was intended. First consider only those

restauranteurs—the great majority—who could have answered, or actually did answer, Q with yes. Their decisions should go as follows.

(1) *Master Charge?* Since the caller probably has just one card, a yes answer to Q is sufficient, and giving information about R is entirely unnecessary. So Q is intended seriously, and R is not intended, putting q at or near 1.00 and r at or near 0.

(2) *American Express?* Same as for *Master Charge?*

(3) *Credit cards?* Since the caller probably owns all five cards, a yes answer to Q is probably sufficient, hence Q is probably intended seriously. But because she may not own all of them, she may need a listing to check on her particular cards, and R may have been intended too. So q should be high, but not as high as for *Master Charge?* or *American Express?*, and r should be low, but not as low as for *Master Charge?* or *American Express?*

(4) *Any kinds of credit cards?* Since the caller probably owns three or so cards but not five, a yes answer to Q is informative, but hardly sufficient. Q may be intended seriously, but R is very likely intended so that she can check on her particular cards. This puts q lower than for *Credit cards?* but not 0, and puts r much higher than for *Credit cards?* but not 1.00.

(5) *Any other credit cards?* This is an odd question. Since the caller has just received a yes answer to either *Master Charge?* or *American Express?*, she has suggested that she owns an acceptable card. So why ask about *other* cards? She must be asking for a friend, or be inquiring about another card she might like to use, or something similar. A yes answer to Q, then, won't ordinarily be informative, but a response to R will. So Q is probably pro forma as a way of conveying R to elicit these other cards. This puts q near 0 and r near 1, more extreme in both values than for *Any kinds of credit cards?*

Before planning his response, the restauranteur has one other factor to contend with—the number of credit cards *he* accepts. For *Credit cards?* and *Any kinds of credit cards?*, a yes answer alone would be taken, for reasons discussed by Grice (1975), as implicating that he accepts *any* major credit cards. If he doesn't, a yes answer is misleading, and he should go on to list the several credit cards he does accept. So for these two requests, the fewer credit cards he accepts, the more likely he should respond to R anyway.

What about the restauranteurs for whom the answer to Q was explicitly or implicitly no? Here are the four cases:

(1) *Master Charge?* Since the caller probably has just one card, a no answer to Q is sufficient. Still, she *may* have a second card, and respond-

ing to R might be informative. So Q is intended seriously, and R may be intended, putting q at or near 1.00, and r somewhere greater than 0.

(2) *American Express?* Same as for *Master Charge?*

(3) *Credit cards?* Since the caller wants to pay with a credit card, a no answer to Q is highly informative. Q must be intended, putting q at or near 1.00. But with a no answer to Q, R doesn't even make sense, although some other R′ may. To decide on R′, the merchant must go to the caller's next higher goal—she wants to pay with something besides cash. Indeed, R′ could be "Tell me other ways I can pay." The value of r' for this R′ should be larger than zero.

(4) *Any kinds of credit cards?* Same as for *Credit cards?*

Results

Affirmative answers. The responses in which Q's answer was explicitly or implicitly yes are summarized in Table 12, and the $\hat{q}$'s and $\hat{r}$'s estimated from them are listed in Table 13. These are the responses that paved the way for the restauranteur to respond to R too if he chose to.

The expectations about Q were strongly confirmed. The $\hat{q}$'s for *Master Charge?* and *American Express?* were exactly 1.00. For these no restauranteur merely listed the credit cards they accepted. As expected, the $\hat{q}$'s for *Credit cards?* and *Any kinds of credit cards?* were lower at .84 and .67. For these a fair number of restauranteurs merely recited their credit card list. These two $\hat{q}$'s are each significantly smaller than each of the earlier 1.00s ($z \geq 1.87, p < .05$), and as expected, .67 is significantly smaller than .84 ($z = 1.81, p < .05$). Finally, as expected, $\hat{q}$ was virtually nil at .10 for *Any other credit cards?* Almost no restauranteur took Q seriously for this request. This .10 is significantly smaller than each of the others ($z \geq 5.46$, $p < .001$).

The expectations about R were strongly confirmed too. The $\hat{r}$'s for

TABLE 12

Percentage of Restaurants Able to Answer Yes Giving Answers and Information to Five Requests in Experiment 5

Requests	Answer alone	Answer plus information	Information alone	Other
(1) Master Charge cards? (32)[a]	94	6	0	0
(2) American Express cards? (20)	100	0	0	0
(3) Credit cards? (45)	44	38	16	2
(4) Any kinds of credit cards? (39)	10	56	33	0
(5) Any other credit cards? (50)	2	8	88	2

[a] Number of restauranteurs asked each request who could have answered yes indicated in parentheses.

TABLE 13

Estimates of q and r for Five Requests in Experiment 5

Request	Parameters	
	$\hat{q}$	$\hat{r}$
(1) Master Charge cards?	1.00	.06
(2) American Express cards?	1.00	.00
(3) Credit cards?	.84	.46
(4) Any kinds of credit cards?	.67	.85
(5) Any other credit cards?	.10	.80

Master Charge? and *American Express?* were .06 and .00, respectively. For these two requests, only 2 of 52 restauranteurs followed up their yes answer with a list of their credit cards even though all of them accepted other credit cards and could have done so. In contrast, 46% of the restauranteurs followed up their yes answer on *Credit cards?*, and almost twice as many, 85%, did so on *Any kinds of credit cards?* Among these $\hat{r}$'s, .46 is significantly larger than .06 ($z = 3.78$, $p < .001$), and .85 is significantly larger than .46 ($z = 3.21$, $p < .001$). The $\hat{r}$ for *Any other credit cards?*, .80, is roughly the same as that for *Any kinds of credit cards?* But based as it is on only five responses, this $\hat{r}$ is probably an underestimate; by Scheme 2, it is .96.

The restauranteurs who accepted any credit cards accepted from one to five of them. When asked *Credit cards?* or *Any kinds of credit cards?*, as expected, 100% of those accepting just one credit card went on to list it, while only 60% of those accepting five went on to list theirs. The correlation between number of credit cards accepted and the percentage listing them was $-.76$, $t(77) = 1.94$, $p < .05$. Part of this correlation could be explained by assuming that it is easier to list one than five credit cards, but this could not be the whole story. Almost all the restauranteurs accepting all five credit cards and responding to R didn't enumerate them but said such things as "Yes, we accept all major credit cards" or "Yes, we have all of them, as a matter of fact." These responses are as short as "Yes, we accept Master Charge cards" and even shorter than an explicit listing of two or more cards, as in "Yes, we accept Master Charge, Visa, and American Express." So although length of response may have been a contributing factor, the restauranteurs appear to have been sensitive to the implications of their responses too.

The elliptical responses to R are summarized in Table 14. (*Master Charge?* and *American Express?* have been omitted since between them they elicited only two responses to R.) As in Experiments 1, 2, and 3, there was more ellipsis in the information-alone responses than in the

TABLE 14

Percentage of Elliptical Responses to Three Requests in Experiment 5

Request	Answer plus information	Information alone	Total
(3) Credit cards?	82	86	83
(4) Any kinds of credit cards?	50	62	54
(5) Any other credit cards?	25	98	92
Totals	60	89	78

answer-plus-information responses, 89 to 60%. This difference is significant ($\chi^2(1) = 10.50, p < .001$). Also, there was less ellipsis for *Any kinds of credit cards?*, 54%, than for either of the other two, 83 and 92%. This percentage is significantly smaller than each of the other two ($z \geq 2.36, p < .02$).

As for the 120 affirmative answers in this experiment, 81% were *yes* and the rest were *yeah, uh huh,* or *sure*. The percentage of *yes* answers ranged from 69 to 100% on the five questions, but did not differ significantly or follow any clear pattern.

Negative answers. The expectations about *Master Charge?* and *American Express?* were nicely confirmed. For these there were two types of responses to R. One type asserted that the restaurant didn't accept any credit cards at all. The second type, which occurred only for *American Express?*, listed all the cards that *were* accepted. For the answer-alone, answer-plus-information, and information-alone categories, there were 14, 4, and 0 responses to *Master Charge?* and 18, 10, and 2 such responses to *American Express?*, respectively. So $\hat{q}$ was 1.00 and .93 for *Master Charge?* and *American Express?* This average $\hat{q}$ of .96 obviously doesn't differ from the $\hat{q}$ of 1.00 when the answer to Q was yes. In contrast, $\hat{r}$ was .22 and .36 for these two sentences. This average of .30 is significantly larger than the $\hat{r}$ of .03 when the answer to Q was yes ($\chi^2(1) = 10.76, p < .001$). In brief, *Master Charge?* and *American Express?* were construed as conveying request R only when the answer to Q was no.

The findings for *Credit Cards?* and *Any kinds of credit cards?* also turned out as expected. For these, when the answer to Q is no, that answer should always be made explicit, since it is not implied by any response to an indirect R. It was: $\hat{q}$ was 1.00 for both. This value is almost significantly larger than the average $\hat{q}$ of .76 when the answer to Q was yes ($\chi^2(1) = 3.39, p < .07$).

For *Credit cards?* and *Any kinds of credit cards?*, when the answer to Q is no, R makes no sense. As expected, many restauranteurs found an R'

that did, namely "Tell me other ways I can pay." Fully 38% of them mentioned personal checks, as in "No. Local checks." This puts $\hat{r}'$ at .38. (A surprising number also mentioned cash—completely redundant information— but almost always along with a mention of personal checks, as in "No, we just take checks or cash.") Even 15% of the restauranteurs answering no to *Master Charge?* and *American Express?* mentioned checks, putting the average $\hat{r}'$ for them at .15. Combining $\hat{r}$ and $\hat{r}'$ for *Master Charge?* and *American Express?*, we get .41, which emphasizes even more how readily they were construed as conveying requests when the answer to Q was no. By comparison, none of the 186 restauranteurs answering in the affirmative in Table 12 mentioned checks. They didn't need to, since the affirmative information about credit cards was obviously sufficient.

Discussion

On the surface, these findings show that the interpretation of an interrogative construction can change enormously with small changes in a noun phrase. The five sentences used were all of the form *Do you accept X?* Yet as X went from *Master Charge cards* to *credit cards* to *any kinds of credit cards* to *any other credit cards*, Q was taken seriously less and less often, and R was taken to be meant more and more often. Both $\hat{q}$ and $\hat{r}$ ran the gamut from 0 to 1. Compared to Experiments 1 through 4, these variations are very dramatic indeed.

Beneath the surface, it seems clear that these changes were brought about by the restauranteur's conception of the caller's plan. His assumptions and implicit reasoning went something like this. The caller is a potential customer who wants to pay for a meal at his restaurant with a credit card. Her goal in performing this speech act is knowledge of whether one of her credit cards is accepted by the restaurant and perhaps, failing that, whether some other form of non-cash payment is possible. Her plan for reaching this goal will vary with which credit cards she owns, a plan she intends him to infer from her choice of noun phrase. In short, she expects him to infer her goals and plans in order to see what she meant.

Although the caller's plan, as the restauranteur reconstructs it, may be extensive, he realizes he is expected to deal with only the first one or two steps—for example, answer Q and comply with R. Yet he may also realize that these or other parts of her plan are based on false assumptions, which he will want to correct in a cooperative but unexpected move. The caller's question, for example, suggests that she may patronize the restaurant that night. That assumes that the restaurant is open, and if it isn't, the restauranteur will want to correct this assumption. Indeed, several did, as in "Uh, yes, we accept credit cards. But tonight we are closed." and "Uh

uh. We're not open anyways." These cooperative but unexpected moves are further evidence that the restauranteur actively reconstructs the caller's plan as completely as he can and uses it in order to understand her and then plan his response.

GENERAL DISCUSSION

From these five experiments emerges a picture of indirect speech acts and their responses that has several new features. These features fall under four headings: indirect speech acts, understanding indirect speech acts, planning responses, and ellipsis.

Indirect Speech Acts

Indirect speech acts, according to Searle (1975), have at least two meanings—a literal meaning M_1 and an indirect meaning M_2. Furthermore, M_2 is conveyed by virtue of M_1. To these and the other properties listed in the beginning, we can add three important refinements.

Seriousness of the literal meaning. Although M_1 may always be "conveyed" along with M_2, it is not always intended to be taken seriously. For some requests in these experiments, Q was taken as entirely pro forma, merely as a polite means of conveying R, and was not answered with an explicit yes or no. For other requests, it was taken very seriously, as if the caller really wanted to know its answer, and was then answered with an explicit yes or no. That is, a major determinant of whether a merchant answered Q or not was his estimate of how likely it was intended to be taken seriously.

Seriousness is a property of other, perhaps even all, genuine indirect speech acts, although its consequences may vary from one speech act to the next. Take greetings, for example. In English speaking cultures, they are conventionally conveyed indirectly by asking after someone's health. (In other cultures, they are conveyed by other means (Morgan, 1978).) *How are you feeling today?,* for example, is an unidiomatic greeting, and Q would ordinarily be taken quite seriously and might elicit an honest *Okay, except for my knee. How are you?* is highly idiomatic, and Q would ordinarily be taken pro forma. It is likely to elicit the pro forma answer *Fine, thank you,* regardless of health, or even merely the return greeting *How are you?* For historical reasons, the related greeting *How do you do?* has come to convey its greeting directly, even though the fossil of a question is still visible within it. Since this fossil is never answered even with a pro forma *Fine, thank you, How do you do?* is a complete idiom—though only a semiopaque one. *Hi,* historically a compressed form of *How are you?* via *Hiya,* doesn't even have a trace of Q left in it,

and as an opaque idiom, it also conveys its greetings directly. Similarly continua have been discussed by Clark and Clark (1979) and Morgan (1978).

Uncertainty of meaning. For *Do you accept credit cards?,* about 50% of the merchants responded to R, and the other 50% did not. Were the former merchants *certain* the caller meant R, and the other merchants just as certain she did not? The answer, I believe, is no. More likely, all the merchants were uncertain to some degree, feeling that the caller may have meant R, but then again may not have. They could only guess at her plans, and that guess was inherently probabilistic.

What, then, are we to make of the responses the merchants did give to R? In their eyes, these responses may have been neither pure "expected moves" nor pure "added moves," as these were distinguished earlier. Rather, they were conditionally expected moves, as if the merchants were saying, "If you were requesting a list of my credit cards, here they are; if you weren't, here is some helpful information anyway." The more certain they were that the caller really did intend R, the more often the best strategy was to respond to R anyway.

A fundamentally different view, however, is that the caller herself intended Q and R to be uncertain. Up to now, I have called q an estimate of how *likely* Q was intended to be taken seriously. Instead, it could be thought of as an estimate of how *seriously* Q was intended to be taken. Similarly, r could be thought of, not as how *likely* R was intended, but as how *seriously* R was intended. This view makes good sense for at least some kinds of indirect speech acts, such as hints. Imagine A asking B, *What did you think of Vanity Fair?,* intending it as an indirect hint for B to return the book to the library. If he understands the hint correctly, he realizes that he could either take the hint (*I liked it—I'll return it today*) or not take the hint (*I liked it—what did you think?*) and that she intended him to have this option and to see that she was leaving him this option. She meant R only half seriously. By making weaker or stronger hints, she could have varied its seriousness from nil to complete. The same rationale could be applied to *Do you accept credit cards?,* where the merchant could see the caller as intending R only half seriously. In short, the uncertainty of meaning could have one of two loci: in what A intended, or in B's recognition of what she intended. For the predictions of these experiments, as it happens, it makes no difference which.

Conditional indirect speech acts. In Experiment 5, several requests were found to convey not just a single pair of meanings Q and R, but one pair of meanings Q + R when Q's answer was yes, and another pair of meanings Q + R′ when the answer was no. *Do you accept credit cards?,* for example, was taken to mean R ("List your credit cards") when Q's

answer was yes, but R′ ("Say how else I can pay") when the answer was no. These, then, are conditional indirect requests. *Credit cards?* would be paraphrased as follows: "I ask you whether or not you accept credit cards and I thereby request you to tell me, if you do accept any, which ones you accept, and if you don't, how else I can pay." Each of these Q's and R's, of course, has its own likelihood or seriousness value.

Most indirect speech acts don't have this conditionality. When A asks B to add salt to the soup by asserting *This soup needs salt,* she intends him to add salt with no possible options. He may try to forestall the request by disputing her assertion—*No, it doesn't*—but that is contrary to her intent. When the literal meaning is a question, however, B is intentionally left with an explicit option, and the indirect speech act is conditional. *Can you add salt to the soup?* says "I ask you whether you are able to add salt to the soup and I request you to add it if you are able and not to add it if you are not able." *Do you want some coffee?,* likewise, is an indirect promise to fill the cup if the answer is yes and not to fill it if the answer is no. What makes *Credit cards?* and *Any kinds of credit cards?* different from these others is that their two options are both positive actions, and each has its own probability.

Understanding Indirect Speech Acts

The merchants in these experiments relied on many different scources of information in estimating q and r. The six I have identified are as follows.

(1) Conventionality of means. In English, some means for making requests are conventional, and others aren't. For conventional means, merchants should be more certain Q was merely pro forma and R was meant, leading them to lower q and increase r. These predictions were confirmed in Experiments 1 and 2, but because they were confounded by other factors, it was impossible to identify conventionality of means as an independent source of information.

(2) Conventionality of form. Similarly, some forms of requests are conventional or idiomatic, and others are less so. For idiomatic requests, merchants should lower q and, if possible, increase r, and in Experiment 3, they did. Idiomaticity is an important source of information for other indirect speech acts too, as in the greetings cited earlier, which ranged from *How are you feeling today?* to *How are you?* to *How do you do?* to *Hi.*

(3) Special markers. In English, *please* can be used to mark some utterances as requests, and in the right circumstances so can other markers, like *for me* in *Can you open the door for me?* On encountering such markers, merchants should be more certain Q is merely pro forma and R is meant. In Experiment 3, the evidence, though weak, was that they

were. Other markers are appropriate to other speech acts and should be a useful source of information too.

(4) Transparency of the indirect meaning. The indirect meaning is more transparent in some indirect speech acts—more completely specified in the words uttered—than it is in others. The more transparent the indirect meaning is, the more confident merchants can be that the literal meaning is pro forma and the indirect meaning is truly intended. This prediction was confirmed in Experiment 2. Also in line with this prediction, conventional requests, which tend to be more transparent than nonconventional ones, had consistently lower q's and higher r's. In general, it is the transparent indirect speech acts that appear most likely to evolve historically into conventional ones.

(5) Implausibility of the literal meaning. For some indirect requests, the answer to Q is obvious to both A and B, but for others, it is not. The more obvious the answer, the more confident merchants can be that Q was not intended seriously and that R was intended. This prediction was confirmed in Experiment 2, though problematically. Yet one mark of most conventional requests is that their Q's have obvious answers, and these requests consistently yielded lower q's and higher r's. Indeed, requests with obvious answers to Q are just the ones that have had the best opportunity historically to evolve into conventional ones.

Implausibility, or irrelevance, of literal meaning is a property of other indirect speech acts too, though in different ways. Most of Grice's (1975) and Searle's (1975) examples of conversational implicature, of which indirect speech acts are but one kind, work in part by the implausibility of their literal meaning alone in context.

(6) The speaker's imputed plans and goals. When A performs an indirect speech act with M_1 and M_2, B assumes that these were intended as two steps in a broader plan for attaining some goal. What is critical is that he further assumes that he is expected to infer her plans, at least to some degree, in order to decide what she meant. This point was demonstrated explicitly in Experiments 4 and 5 yet was also at work in Experiments 1, 2, and 3. The point is very general. Plans and goals are particularly important when they are among the only clues to M_2, as in A's assertion to B, *This soup needs salt,* whose M_2 varies enormously with the context.

By what process is all this information put together? The answer is complicated. Note that the six sources of information are roughly of two kinds. The first four sources consist of linguistic characteristics of the utterance itself—data in the perceived event. The last two sources consist of expectations B has built up based on the circumstances in which the utterance occurred. The process that puts them together, then, must be an interactive process that is both "data driven" and "conceptually driven," to use Norman's (1976) terms. It must work both "bottom up" from the

data in the utterance and "top down" from the conceptual base in which the utterance is being processed.

The process must be flexible enough to use whatever pertinent information is available. Imagine A stopping B, a stranger, on a busy street and saying *Will you please take me to Grand Central Station?* To see what she has requested, he will rely mostly on facts about her utterance—that it is a transparent conventional request marked by *please*. The circumstances will be of little help, since they make such a request quite unexpected. Imagine, instead, A stepping into B's taxi and saying the same thing. Since he expects just such a request, he can use both sources of information—the utterance itself and his expectations. In fact, the taxi circumstances are so rich that she would have got by with the minimal *Grand Central Station*. From his expectations, he will infer that she is requesting him to taxi her somewhere and that what she has specified is the destination. In short, B's understanding is mostly data driven in the first case, half data driven and half conceptually driven in the second, and mostly conceptually driven in the third.

As for speed of processing, understanding M_1 and M_2 should be faster, all other things being equal, the more sources of information converge on them. Evidence for this is found in Schweller's (Note 6) comparison of how long it took people to understand sentences in two contexts, (1) contexts that induced M_1 alone and (2) contexts that induced both M_1 and M_2. Sentences with highly conventional means and forms for making requests—two sources of information that converge on M_2—were understood more quickly when construed as indirect requests than when construed literally. In contrast, sentences not conventionally used for making requests—where the two sources of information converging on M_2 were lacking—were understood more quickly when they were construed literally. So this evidence fits.

In a previous paper (Clark & Lucy, 1975), Lucy and I tentatively proposed that B first computes M_1, then decides whether or not M_1 alone could have been intended in that context, and, if it could not have, goes on to infer M_2. That model, I now believe, is misleading in several respects. First, it treats conventional indirect requests, like *Can you tell me the time?*, as if they conveyed requests directly and were equivalent to the semiopaque idiom *How do you do?* as a greeting. This now seems oversimplified. Second, it assumes that in indirect speech acts M_1 is never intended to be taken seriously. As Experiments 1 through 5 show, this assumption is not correct. And third, it was designed to handle only the fifth source of information—plausibility of literal meaning. As a result, its applicability is limited, and those limits are not well defined. These shortcomings have been taken care of in the present model, though at the expense of simplicity.

In the previous model, for many requests, M_1 was computed before M_2. Once we assume multiple sources of information, this proposal no longer holds much generality. For most requests it makes little sense to speak of one meaning being computed before the other. Imagine A stepping into a taxi and asking B, the driver, *Will you take me to Grand Central Station?* From the phrase *Grand Central Station* alone, he could guess her request M_2 and then go on to figure out M_1. But this last step is necessary, for if she had said *Is this Grand Central Station?* or *Where is Grand Central Station?* or *Do you pick up people at Grand Central Station?,* he would otherwise have misunderstood her, as children often do in comparable situations (Schatz, 1978). So although the driver guessed M_2 before M_1, he couldn't verify that guess without computing M_1. On the other hand, he had to compute at least part of A's literal meaning—the phrase *Grand Central Station*—before he could even guess at M_2. It seems misleading in this case to talk about either meaning having been computed first.

In the current model, M_1 and M_2 are computed as parts of a single package. The same six sources of information are used in computing both meanings, and they are presumably used by both data driven and conceptually driven processes as they become available. It may happen that a listener will become confident he has recognized one meaning before the other. Yet that doesn't imply that he finished computing one meaning before beginning on the other, although that is possible in certain circumstances.

What is lacking so far is a specification of how the six sources of information interact as they are put together. The present findings give only hints about this process. When an indirect request was conventional, r tended to be estimated at the maximum, regardless of other factors, and q was determined by the other factors. Otherwise, when Q was intended seriously, R tended not to be, and vice versa. It is as if people prefer speech acts with only one serious meaning, although this preference is anything but perfect. Details about the amalgamation process must wait on future research.

Planning Responses

Once B has understood A's utterance, he must plan his response—though he may start planning and even responding before he has fully understood it. These experiments suggest that B will ordinarily make the expected moves, but he can modify, add to, or even replace these depending on the circumstances.

First, B may add in preliminary moves, like *uh* and *just a minute,* which occurred often in these experiments. One special preliminary move was the self-clarification, like "The time we close" (with falling intonation), which appeared when the requests were difficult to understand.

Second, B may see that in A's plan she is presupposing something that isn't true, which he may want to correct in a cooperative but unexpected move. This move may replace an expected move, as when one liquor dealer said "Sorry, we don't have Jim Beam in fifths right now." Or it may be tacked on as an added move, as when one restauranteur said, "Uh, yes, we accept credit cards, but tonight we are closed" (see Kaplan, 1978).

Third, he may modify the expected response to get its implicatures to come out right. When asked *Do you accept credit cards?*, restauranteurs accepting only one or two cards couldn't get away with a mere *yes*, even if they thought that was all that was expected. A *yes* alone would implicate, by Gricean principles, that they accepted credit cards in general, and so these merchants had to go on to say which credit cards they did accept.

Fourth, B may want to answer Q anyway in order to be polite—or not answer it to be impolite. Consider the eight indirect requests in Table 15 each of the form *Can* (or *Could*) *you tell me X?* These forms, being highly conventional, were construed by all but one of the 363 respondents as requests. All but one of the $\hat{r}$'s is 1.00. On the other hand, $\hat{q}$ varied from 0 to .57. The most striking variation seems attributable to politeness. Requests 1 through 5 were all made in an impersonal telephone conversation, only one of many the anonymous merchant would take part in that day. Requests 7 and 8 were made by one student to another, face to face, on the UCLA campus. In that situation the respondent may have felt more responsible for his information—he could be recognized later—and more obligated to treat the requester personally and politely. It was probably this that led to so many more answers to Q. In an informal experiment in which 135 students each asked another student on the Stanford University campus *Could you tell me the time?*, I found similar results, with a $\hat{q}$ of .47. Such politeness isn't confined to UCLA.

Fifth, B may nevertheless lose track and fail to deal with all of A's meanings as he would like. Although Request 6 in Table 15 was asked by Munro of the same population of UCLA students as Requests 7 and 8, it elicited many fewer answers to Q. From Munro's data, the reason seems clear. Many students didn't know the answer to Q right away—they were uncertain where, say, Franz Hall was, as was clear from other things they said. By the time they figured out that they *could* give the directions requested, they may have forgotten the literal question and wanted, in any case, to forge ahead with the directions, which they had already begun to formulate in deciding whether they knew where Franz Hall was.

And finally, of course, B may want to be outright uncooperative. One liquor dealer in Experiment 2 said, "No, we don't give our prices out on the phone." The ways in which B can be uncooperative, and his reasons for doing so, are virtually without limit.

TABLE 15

Estimates of q and r for Eight Similar Requests

Request	Parameters	
	$\hat{q}$	$\hat{r}$
(1) Could you tell me what time you close tonight? (30)[a]	.00	1.00
(2) Could you tell me the time you close tonight? (50)	.08	.75
(3) Could you tell me the price of a fifth of Jim Beam? (50)	.16	1.00
(4) Could you tell me the time you close tonight? (100)	.13	1.00
(5) Can you tell me what the interest is on a regular savings account? (50)	.16	1.00
(6) Can/could you tell me where X is? (22)	.14	1.00
(7) Could you tell me the time? (30)	.57	1.00
(8) Could you tell me what time it is? (31)	.45	1.00

Note. Request 1 is from Experiment 1; 2 and 3 are from Experiment 2; 4 is from an unpublished experiment on bank clerks; 5 is from Experiment 3; and 6, 7, and 8 are from Munro (Note 5).

[a] Number of people asked each request indicated in parentheses.

Ellipsis

In planning each response, B has also to decide how elliptical to be. For Q in these experiments, for example, the merchants eschewed long answers like *Yes, I can tell you what time we close tonight* or even *Yes, I can* and went for the minimum *Yes*. Their responses to R, on the other hand, ranged in ellipsis, as I defined it, from 17% on *I was wondering* to 92% on *Any other credit cards?* Why?

Ellipsis is possible only so long as what is missing is reconstructable by the listener. According to Hankamer and Sag (1976), there are two kinds of ellipsis.[4] One requires that the surface structure of the sentence uttered, or something akin to it, be reconstructable from the linguistic context. In *Julia discovered a virus and I did too,* the verb phrase missing after *did* must be reconstructable from the linguistic context, and it is. The second kind of ellipsis requires only that the *meaning* of the utterance be reconstructable, which can be done from nonlinguistic as well as linguistic contexts. A's elliptical request to the taxi driver, *Grand Central Station,* is of this kind. As for the present experiments, the elliptical responses to Q, like *Yes* and *Yes, I can,* appear to be of the first kind. Since the linguistic context was always present, it isn't surprising such ellipsis occurred 100% of the time. The elliptical responses to R, like *Six* or *About six,* appear to be of the second kind. Since the precision with which R was

[4] The term ellipsis here is being used to denote elliptical sentences, as defined in Experiment 1. For Hankamer and Sag, it is a technical term denoting one special kind of incompleteness in sentences.

specified by the context varied enormously from one context to the next, it isn't surprising that their occurrence varied from 17 to 92%.

It is the precise form of R that must be reconstructable from the context, and that was aided in these experiments by two factors—conventionality and transparency. R should be readily reconstructable for requests that are conventional in both means and form. That is what is meant, in effect, by being conventional. In Experiment 3, the conventional *Can you?* led to 64% ellipsis, while the otherwise identical but less conventional *Are you able?* led to only 38% ellipsis. Furthermore, when a request is not conventional, the more transparent R is, the more precisely its form can be recaptured. In Experiment 5, for *Do you accept credit cards?*, it is clear that R is "Tell me which credit cards you accept," but for *Do you accept any kinds of credit cards?* its precise form could be either "Tell me which credit cards you accept" or "Tell me which kinds of credit cards you accept," which leaves R less transparent. Indeed, *Credit cards?* led to 83% ellipsis and *Any kinds of credit cards?* to only 54% ellipsis. Together, these two factors account for the broad pattern of ellipsis in these experiments. The conventional transparent requests generally drew around 75% ellipsis and the nonconventional less transparent requests around 20% ellipsis. Nevertheless, details in this pattern have yet to be accounted for.

There was one other highly consistent finding in these experiments: Whenever the response to R could be elliptical, as for conventional requests, it was elliptical more often when it was a single move, as in *Six o'clock,* than when it followed the answer to Q, as in *Yes, six o'clock.* Why? Several possible explanations suggest themselves. One is that whenever a merchant makes two moves, he needs to make sure they are distinguishable, and so he uses a complete sentence for the second one. Another possibility is that the merchants who took Q seriously and answered it were just those merchants who intended to deal as explicitly as possible with all of the caller's meanings. So when it came to the second move, they tended to be more explicit there too. A third possibility is that planning and executing an answer to Q interferes with the merchant's memory for the precise form of R. Without the exact form in mind, he cannot be certain that ellipsis is possible and so he is forced to use a complete sentence instead. The merit of this last explanation is that it ties in with the account just offered for the other types of ellipsis. Needless to say, however, the explanation for these findings is still open.

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(Accepted April 5, 1979)