Interactional Reconstruction

in Real-Time Language Processing

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This study documents and characterizes a phenomenon in naturally-occurring conversation which I have termed interactional reconstruction. Interactional reconstruction involves retroactive reinterpretation of an earlier utterance (or set of utterances) on the basis of a more recent utterance (or set of utterances). This work is meant to serve two functions: first, to enrich our theories of human communication; and second, to explore directions and implications for theories of meaning and discourse modeling within cognitive science.

1.1. INTRODUCTION

This study represents an exploratory step in the direction of understanding one of the communicative processes in naturally occurring English conversations. This work is meant to serve two functions: first, to generally enrich our theories of human communication; and second, to suggest directions our modelings of human dialogue within intelligent systems should eventually take to be fully robust and user friendly.

In the last 10 years, there has been something of a small revolution within cognitive psychology and linguistics concerning the model of communication generally assumed to be operative in human language processing. Since the time of Aristotle, the academically standard view of communication involved an active encoder who packed his/her thoughts into the appropriate words and sent those words to a passive decoder, who then unpacked the words and got out the thoughts stored therein. This model of communication, referred to as telementation by Harris (1981) and the conduit metaphor by Reddy (1979), sees the process of comprehension as effortless and
essentially error-free; meaning is determinate, unidirectional (from speaker to hearer), and easy to access.

The more recent (and to my mind revolutionary) model of communication treats successful communication as an achievement rather than as a matter of course and sees the hearer/reader as constructing meaning from a speaker's discourse, using the surface linguistic forms very much like a guide (rather than as the direct source of meaning themselves). The process is seen as occurring necessarily in real time.¹

What I would like to do in this paper is expand our model of communication still further to include the following claims:

1. **Meaning**—loosely defined to encompass structure and social actions, as well as the usual domains of semantics—is not determinate or fixed.
2. The interpretation (i.e., the meaning, in the loose way the term is used in #1) of a portion of discourse can be changed retroactively by some later portion of discourse.

The first of these two postulates is of course not new and can be found in a variety of authors, including Voloshinov (1973) and Wittgenstein (1958), and in numerous literary critics (Iser, 1974). The second of these, however, has been touched on in literary criticism, but to my knowledge has not been explored extensively within cognitive science. If the process described in postulate #2 is indeed documentable, then we must modify our model of communication still further. For if an interpretation of a portion of discourse is valid at one point in time and another interpretation of the same portion of discourse becomes valid at a later point, then our theories of how interpretations (or meanings, if you will) are constructed in real time must be expanded to allow for some process of reconstructing past interpretations on the basis of new data. Toward the end, then, of enriching our model of communication, the major task of the present study is to **describe and document the phenomenon outlined as postulate #2**, a phenomenon I will call **interactional reconstruction**.

The remainder of the paper is organized as follows: section 1.2 documents and characterizes the phenomenon of interactional reconstruction in naturally-occurring English conversations; section 1.3 briefly discusses some of the implications of this phenomenon for discourse modeling; and section 1.4 offers some concluding remarks.

¹ van Dijk and Kintsch (1983) describe this model (with regard to reading) very clearly:

The strategies applied [in discourse comprehension] are like effective working hypotheses about the correct structure and meaning of a text fragment, and these may be disconfirmed by further processing. Also, strategic analysis depends not only on textual characteristics, but also on characteristics of the language user, such as his or her goals or world knowledge. This may mean that a reader of a text will try to reconstruct not only the intended meaning of the text... but also a meaning that is most relevant to his or her own interests and goals. (p. 11)
1.2. INTERACTIONAL RECONSTRUCTION
IN CONVERSATION

1.2.1. Reconstruction
The process of reconstruction has been noted at a fairly global level in human behavior (Bransford, 1979). Typically, at this level, some event occurs in one's life which causes one to go back to earlier events and re-analyze them in terms of the recent event. A recurrent example of this in our society is when someone discovers that a (supposedly straight) friend is gay; this new knowledge typically causes that person to go back through the events of the friendship and re-interpret them - validly or not - with regard to this new framework.

The type of reconstruction I'll be concerned with in this study differs from this more global reconstruction in four critical ways: first, interactional reconstruction takes place in real time, rather than requiring extended periods of time in contemplation; second, what is reinterpreted is some portion of the immediately preceding discourse, rather than some distant event; third, by the process of interactional reconstruction speakers reinterpret discourse events, rather than some other kinds of events; and fourth, the reconstruction is "induced" interactionally. Thus while the basic principle is the same (hence the use of the term reconstruction here), there are critical differences which make interactional reconstruction a separate area of interest.

1.2.2. Interactional Reconstruction
Since the examples of interactional reconstruction that I will be discussing arise (not coincidentally) in conversations, it seems appropriate to begin this part of the discussion by exploring some aspects of conversation which are relevant to our concerns here.

Although I will not be concerned with written texts here, it is clear that something like reconstruction takes place during the reading process. Iser (1980) has this to say about reinterpretation in reading:

For this reason, expectations are scarcely ever fulfilled in truly literary texts. . . . For the more a text individualizes or confirms an expectation it has initially aroused, the more aware we become of its didactic purpose, so that at best we can only accept or reject the thesis forced upon us. . . . But generally the sentence correlatives of literary texts do not develop in this rigid way, for the expectations they evoke tend to encroach on one another in such a manner that they are continually modified as one reads. One might simplify by saying that each intentional sentence correlative opens up a particular horizon, which is modified, if not completely changed, by succeeding sentences. While these expectations arouse interest in what is to come, the subsequent modification of them will also have a retrospective effect on what has already been read. This may now take on a different significance from that which it had at the moment of reading. (Tompkins, 1980, pp. 53-54).
Undoubtedly the crucial facet of conversation—at least with respect to the phenomenon I would like to document here—is its mutual construction by the people involved. That is,

in conversation little if anything can be done assuredly unilaterally. Even for utterances, we speak of their "possible completion points" because, in part, the speaker may continue or another speaker may build something on to an otherwise seemingly completed utterance, so that its initiator turns out not to control fully what his utterance turns out to be (Schegloff, 1976:95).

Furthermore, conversations represent unplanned discourse (Ochs, 1979), in that their course is determined not by prior plan (as is the case with formal written texts) but by local negotiation among the participants. They are spontaneously generated for the context, in the moment.

Schegloff (1981) emphasizes the importance of these characteristics for the study of conversation:

Important analytic leverage can be gained if the examination of any discourse is conducted in a manner guided by the following: (1) The discourse should be treated as an achievement; that involves treating the discourse as something 'produced' over time, incrementally accomplished, rather than born naturally whole out of the speaker's forehead, the delivery of a cognitive plan. (2) The accomplishment or achievement is an interactional one. Quite aside from whatever individual cognitive or processing achievements might be involved (which are not to be treated only as anterior to the interactional), the production of a spate of talk by one speaker is something which involves collaboration with the others present, and that collaboration is interactive in character, and interlaced throughout the discourse, that is, it is an ongoing accomplishment, rather than a pact signed at the beginning, after which the discourse is produced entirely as a matter of individual effort. (p. 73)

These two features of natural human conversation—its mutuality and unplannedness—create a situation in which both production and comprehension are done in response to real-time, momentary pressures. That is, unlike reading, in which the writer cannot respond to any particular reader and cannot in any way modify the text after the fact, conversing allows the participants to respond to one another, to their own previous discourse, and to what another has made of their own talk. This is an obvious and apparently trivial characteristic of conversation, and yet it has implications for the process of on-line comprehension that have not been adequately explored within cognitive science. It is within this view of conversation that the notion of interactional reconstruction makes sense.

Let me now turn to the critical matter at hand, namely, documenting and characterizing the phenomenon I am calling interactional reconstruction. A very rough starting characterization is given below:

A set of utterances is produced at time $t_1$, and is analyzed by the participants in the conversation at that time. At some later time $t_2$, another set of utterances is
produced which causes the participants to retroactively re-interpret the utterances produced at time t.

Three points which will be elaborated on in section 1.2.3 deserve brief mention here. First, I will be dealing with instances of reconstruction which are covert rather than directed; that is, in the examples explored here, the recipient discovers the new interpretation without explicit direction from the speaker. While directed reconstruction is produced according to the general mechanism described above and is clearly an important type of reconstruction, I have chosen to focus in this article on covert reconstruction. This choice rests on the implications for discourse modeling: the fact that people can create a new meaning for some piece of discourse retrospectively simply on the basis of a new piece of discourse (and not metadiscourse which would overtly direct such a reinterpretation) is an astounding feature of human language, one which has important implications for the study of cognitive processes, the nature of meaning and the structure of social interaction.

Second, the reason for the reconstruction is, for our purposes here, irrelevant. In some cases it is impossible to tell what motivates the reconstructing utterance. The reconstruction could arise from a misunderstanding, or to create a joke, or to shift the focal point of an argument to avoid defeat, or to accomplish any one of a number of other possible outcomes. In any event, what is important here is that a retroactive re-interpretation of a previous utterance or set of utterances takes place on the basis of subsequent talk, and that the reconstruction is accomplished covertly.

Third, since non-determinateness, or ambiguity, lies at the heart of reconstruction, any source of non-determinateness can serve as the site of reconstruction. Thus, reconstruction occurs on all levels of linguistic structure, including phonological, morphological, and lexical. The most common focus of reconstruction, however—at least in my corpus—is the discourse role of an utterance. But I am sure that examples of reconstruction at the other levels also exist.

These are, very briefly, the principles of interactional reconstruction as I conceive it. Let me now move on to presenting examples, so that the principles will become clear.

The first example is representative of a class of instances known as fourth position repair (Schegloff, in press). The schema for fourth position repairs is roughly as follows. Speaker A says something at line 1. Speaker B understands this utterance and displays this understanding by responding appropriately at line 2. Speaker A, hearing that speaker B has understood line 1, produces line 3, which is fitted to respond to line 2. But now the gig is up—speaker B now sees, because of the nature of line 3, that his/her displayed understanding at line 2 was incorrect; speaker B then offers a new understanding at line 4. In all the instances I have seen of fourth position repair, the first component of line 4 is "Oh!" often followed by "you mean" plus
the new interpretation. The following example comes from a family dinner conversation. 

(1)
Mother: is everybody (0.2) wash for dinner?

(Gary) y a h
Mother: Daddy and I have t- both go in different
directions, and I wanna talk to you about where
I'm going (tonight).

(Gary): Mm hmm
Gary: Is it about us?
Mother: Uh huh
Russ: I know where you're going.
Mother: Where.
Russ: To the uh (eighth grade )=
Mother: = Yeah. Right.
Mother: Do you know who's going to that meeting?
Russ: Who.
Mother: I don't know.
Russ: Oh:.. probably Mrs. McOwen (and detsa) and
probably Mrs. Cadry and some of the teachers.

The relevant portion of this fragment starts with Mother's "Do you know who's going to that meeting?" Such an utterance could either be a request for information about who is going to be at the meeting (since Russ knows which meeting is under discussion, he may also know who is going to be there) or a pre-announcement. A typical pre-announcement would look something like the following invented example:

(2)
A: Do you know who's going to that meeting?
B: Who.
A: Mrs. McOwen and Mrs. Cadry.
B: Oh, good.

In this type of pre-announcement, A knows the answer to the "question" that is asked at line 1 and is using line 1 to preface the coming of an announcement.

Russ's "who," with which Russ passes on an opportunity to answer Mother's question, strongly indicates that he understands Mother to be making a pre-announcement rather than asking an informational question (which would have required an answer). Mother now responds with "I don't

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1 I have normalized the spelling from the original transcripts. Transcripts are courtesy of Emanuel Schegloff. Notational conventions are explained in the appendix.
Russ now, on the basis of this response from Mother, hears that his original understanding of "Do you know who's going to that meeting?" was wrong—Mother did mean it as an informational question (to which she does not know the answer). His final utterance starts with the characteristic "Oh"; he then proceeds to answer what he now hears as a question. In other words, due to a new piece of data—Mother's "I don't know"—Russ finds a new interpretation for an utterance he had already interpreted and responded to earlier. This process is the essence of reconstruction.

The second example comes from a multi-party face-to-face conversation between three married couples (Mark's wife Georgia is nearby but not actually sitting with the other five people).

The discussion going on when this fragment occurs is quite complex and involves (jokingly) the topic of adultery. Carl and Ann are married and Mark and Georgia are married. The evening before this conversation takes place, Carl went to Mark and Georgia's house for some reason, thinking that both Mark and Georgia would be home. As it turned out, Mark was not at home, and Carl and Georgia were left in the position of being home alone together (without their respective spouses).

(3)

(AD[A]:5-6)

1. Carl: Forgot you were going the races last night.
2. Ann: Yea...it. 'hh
3. (1.0)
4. Ann: I thought you were going to be down there-
5. Carl: Came down there to-
6. Ann: = and // so I sent my husband down the/re.
7. Carl: I was forced to spend an,
8. Carl: forced to spend the evening with your wife.
9. Mark: Well hhh more power to // you,
10. Carl: ((laugh))
11. Ann: ((laugh))
12. Mark: 'hhhhh =
13. Mark: — if you can take her for a whole night Carl ((laugh))

The first eight lines of the fragment are addressed to Mark, since, in the role of "cuckolded man," he deserves an explanation for what happened. At line 9, Mark responds to Carl's "I was forced to spend the evening with your wife" with a good-natured "well more power to you." This is certainly (at least in the teasing mode) a comment from the defeated male to the victor and hence is praise for Carl. At line 13, however, Mark twists this compliment into a slam by insulting Georgia and therefore anyone who would be able to spend a whole night with her (in this case, at least supposedly, Carl). The interpretation of line 9 at line 9 is thus one of good-natured praise for
Carl—note the laughter at lines 10 and 11 from Carl and Ann. The interpretation of this same line at line 13 is clearly less flattering: Ann responds with "Georgia, your husband's being obnoxious again," a definite shift from her laughter at line 11. Mark's unexpected twist at line 13 thus reconstructs the utterance at line 9.

This form of reconstruction, which critically involves the humorous manipulation of a previous utterance, raises the issue of the role of reconstruction in humor in general. It seems likely that interactional reconstruction is a common device in other types of joking, for example, Henny Youngman's famous "Take my wife. Please." and witty repartee, in which the goal is often to twist what the other person has said into something that makes them look foolish, and certain unintentional puns (usually accompanied with so to speak), whose status as puns is "forced" on the recipients after the fact, if they hadn't noticed the pun themselves. Ritual insults (Labov, 1972) sometimes utilize reconstruction to achieve their effect, as in the following example:

(Labov, 1972:141)

A: How tall are you?
B: Five foot seven.
A: I didn't think shit piled that high.

Thus while the exact mechanisms involved in various forms of humor remain elusive, it is clear that at least some kinds of humor utilize reconstruction as a fundamental device.

Another example of interactional reconstruction is given below. Notice that in this passage the reconstruction takes place in a somewhat different way.4

(AD:19-20)

1. Carl: How's uh,
2. (0.7)
3. (Larry) ((cle//ars throat))
5. (0.6)
6. Carl: He's- he's pm the Usac. (0.1) trail // isn't he?
7. Mark: No. He isn't runnin Usac, he runs, just, (0.2) mainly
8. uh, asphalt now, "h/hh =
9. Carl: 'Oh t/eally?
10. Mark: = He does real well.
11. (0.7)

* This passage is from the same conversation as the preceding example. The women are not present for this segment.
12. Larry: Do you ever go down to the Sundusky track down, the asphalt,
13. (Carl) (No, )
14. Mark: I haven't been down there in years and years. I don't care
15. much for asphalt. I like ( // // ).
16. Carl: I'd rather =
17. Carl: = I'd rather watch the dirt track racing yeh, =
18. Carl: = How come he's r- what's:: is he trying to move up?
19. (1.0)
20. Mark: (No he) just found out his car works a whole lot better
21. on asphalt

In this passage the critical reconstructing utterance comes at line 18.
Lines 1-10 basically involve Carl asking a question about Jimmy Linder
and Mark answering that question, with some elaborative comments. At
line 11, then, with a fairly lengthy silence, the question-answer sequence
about Linder could be complete; the participants might be done talking
about Linder. At line 12, Larry starts up another topic (the Sundusky track),
having analyzed the Linder sequence as possibly over. Carl and Mark en-
gage him on this new topic by answering the question he asks at line 12; they
thus participate at least minimally in the new topic. As late as line 17, then,
the analysis would seem to be something like the following:

Linder: complete
Sundusky

But at line 18, an interesting thing happens: Carl goes back to talking about
Linder, using a pronoun (a linguistic device for indicating that one is talking
about something that is not yet closed off or complete; see Fox, 1984 and
Reichman, 1981 for discussion). Carl thereby brings about a reconstruction
of the Linder sequence as being not yet complete, which in turn shows that
the Sundusky track discussion is now to be heard as an interruption of a still
on-going topic, rather than as a new topic following the close of the pre-
ceding topic. Carl's return to talking about Linder using a pronoun thus
accomplishes a reinterpretation of the talk into:

Linder: not complete Sundusky: interruption Linder: resumed

It is not important here to know if Carl meant all along to continue the Linder
sequence, and was thus misunderstood by Larry, or if he decided after Larry
started talking about Sundusky to return to Linder; he accomplishes turning
the Sundusky sequence into an interruption by the use of a pronoun. If he
wished to treat the Linder sequence as brought to closure, rather than as in-
terrupted, he would have structured line 18 differently (see Schegloff, to ap-
pear, for a similar discussion).

1 It is a new, but related, topic. Notice Larry's use of the word asphalt to show a connection
with what has just gone before.
In the following example, we have an interesting covert change in interpretation.

(5)
(TG: 21-23)
1. Bee: 'hmhhh 'hh So you gonna be around this weekend?
2. Ava: Uh::m. (0.3) Possibly.
3. Bee: Uh it's a four day weekend I have so much work to do it
4. isn't funny//y.
5. Ava: Well, tomorrow I have to go in.
   (0.2)
   Bee: You have clas: ss tomorrow?
   [  
   Ava: 'hhhh
   Ava: One class I have. =
   Bee: You mean:: Pace isn't clos://ed?
   Ava: No we have off Monday // (but not ) 'hh
   Bee: Mm I have off t-s- Monday too. hmfff
   Ava: A:n d uh:m 'hh I have to help- getting some
   schedules together for- m- t! //my old
   Mister Bar:rt.
   Bee: 'hhhh
   Bee: Hmmm.
   Ava: A:n d I have to get the group together for him.hh
   (0.5)
   Ava: t! uth!
   Bee: BOY YOU BUSY KID! hh 'hhhh
   Ava: Yeh I know.He gave me // tickets to the ballet in d-
   Bee: hhh 'hhhh
   Ava: exchange for that, so it/'s not too bad.
   Bee: Oh: hh
   Bee: Busy busy //busy
   Ava: 'hhhhh
   Ava: A:n d,
   Ava: hhh//hh
   Bee: Oh I've been getting,
   [  
   Ava: Saturday I n- I've- g- I
   have to go- I think Sunday I'm going ice skating.
   (1.2)
   Ava: I was supposed to go to Albany. But we'd have to
   leave tomorrow morning, so that went out:
   the window,
   Bee: Mm,
   (1.0)
   Ava: And I don't know exactly what's going o:n.//ally.
   Bee: Well if you're around I'll probably see y(hh)ou hnnn!
Our characterization of Bee's line 1 is crucial to the analysis of this passage, so I will discuss it in detail. Bee starts this passage with a type of question that is a canonical form for bringing up the possibility of getting together (what is technically known as a pre-invitation). According to Levinson (1983), pre-invitations are generally performed by questions which check whether "some precondition obtains for the action to be performed." Pre-invitations thus usually check on the whereabouts or plans of the recipient for some specified time period, as the following examples from Levinson (1983) suggest:

What are you doing today?
I was wondering would you be in your office on Monday
What cha doing?

Thus while it is true that we cannot know for sure what Bee meant to be doing at line 1 (since we cannot get inside her head), and while we cannot know with 100% certainty how Ava heard it (since we also cannot get inside her head) we do know that line 1 is exactly fitted to the format of a pre-invitation: it checks on the whereabouts of the recipient for a specific time period.6

There are two types of responses to a pre-invitation. The first type indicates that the conditions obtain for the invitation; this type of response could be called a pre-acceptance. It is typically performed without hesitation and is not preceded by well or um (Levinson, 1983). The second type of response indicates that the conditions for the invitation might not obtain; this could be called a pre-rejection. It is typically done with a bit of silence, sound stretches, and markers like well and um. This second type of response is referred to as a dispreferred second.

By this characterization, Ava’s line 2 is clearly a pre-rejection, or at least a hedge. In other words, we can be fairly certain that Ava heard line 1 as a pre-invitation (whether it was intended to be one or not); no response to a simple information-seeking question would be either preferred or dispreferred, so if she had heard line 1 as a simple information-seeking question, her answer would not have been designed as a dispreferred second. One could argue, of course, that Ava is not completely sure of her plans for the weekend and therefore the hesitation reflects her own thinking about her plans; while I cannot rule out this possibility, it seems unlikely, given how sensitive speakers are to how their utterances might be heard by their hearers.

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6 That an utterance in the form of a question can be doing something other than asking an informational question is clearly a commonplace occurrence. As Schegloff (1976) points out, responding to an utterance like "Do you have a cigarette?" with "Yes, (pause) would you like one?" jokingly misses the entire force of the utterance, which is not really to ask if the person has a cigarette; it is a request for a cigarette. Interrogatives can thus perform actions other than questioning, and questions can be performed with syntactic structures other than interrogatives (for a lucid discussion of this point, see Schegloff, 1976).
that someone who wanted to accept an invitation would respond to that invitation in a way which could be easily interpreted as potentially rejecting (as Ava does in this passage). There is thus a critical difference in conversation between one's real world situation (for example, not being sure of one's weekend plans) and how that situation is presented (for example, hesitantly or not).

Bee can now hear (1) that Ava has very likely interpreted line 1 as a pre-invitation, and (2) that Ava is hedging on the possibility of accepting an invitation. Now, it could be that Bee meant line 1 to be a simple information-seeking question and so Ava's interpretation of it as a pre-invitation is incorrect and not welcome to Bee, or it could be that Bee meant line 1 to be a pre-invitation but does not now want to issue the invitation because of Ava's dispreferred second. Whatever her motivation, at line 3 Bee produces an utterance that is in conflict with Ava's interpretation of line 1 as a pre-invitation. Notice that she could have produced an invitation in spite of Ava's hedging, or she could have said what the invitation would have been had Ava been free (e.g., "Well I was gonna say let's go to the movies"). Instead she produces line 3, which seems to accomplish two things: it lets Ava know why she (Bee) is going to be home over a long weekend (and not out doing something social) and it lets Ava know that she is going to be so busy over the weekend that any social plans with Ava are probably out of the question (in spite of what might have looked like a pre-invitation at line 1). Line 3 is thus the site of the reconstructing (i.e., producing the reconstruction) utterance, in that at line 3 Bee produces something that is inconsistent with one interpretation of what her earlier utterance (line 1) had projected and thus induces a reanalysis of what she was doing at line 1.

That is, since line 3 is in conflict with an invitation to do something over the weekend (Bee is clearly too busy for that), Ava is forced to go back and reanalyze line 1 as possibly something other than a pre-invitation, and in this case she reanalyzes line 1 as a simple information question inquiring about her plans for the weekend. Line 3 thus has a force similar to saying "Oh I was just asking" (where the just here indicates that the recipient had some reason to think that more could have been going on, like some kind of pre-invitation).  

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1 It is worth noting here that in her paper on subsequent responses to pre-rejections of invitations, Davidson (1984) does not mention this sort of response. In her study, speakers either made another attempt at the invitation or simply accepted a rejection ("okay").

2 Schegloff, 1968 discusses a related phenomenon having to do with the two possible interpretations of calling to someone by name—greeting and summoning. If the recipient hears the vocative as a summons, the speaker can reply with "I was just saying hello." Further, That the systematic ambiguity of the term (i.e., its use to do more than one activity—here "summoning" and "greeting") is available when invoked by the second party suggests that the summoner can see how the error could be made; he can see its methodical character. Members may be able, then . . . to methodically detect which of two activities a term is being used for . . . (p. 1082)
The fragment thus seems to suggest the following analysis: Bee produces what is interpreted by Ava as a pre-invitation and Ava responds to it in a way that suggests she might reject an invitation; Bee then, induces a reconstruction of her own line 1 without ever having to overtly deny Ava’s interpretation of line 1.  

At this point, Ava’s response beginning at line 5 indicates that she may be operating with both possible interpretations. Beginning at line 5, she produces what Drew (1984) calls a reporting, which after something like an invitation or pre-invitation serves the following functions (Drew, 1984):

1. Reportings recurrently involve a speaker detailing some activities or circumstances without explicitly stating the implications of the reporting. By just detailing some activities or planned activities...speakers withhold officially taking positions about the possible implications of their reportings.
2. It is left to recipient to discover the upshot of a reporting. (p. 137)

Ava’s reporting, then, is perfectly fitted to the circumstances she finds herself in. As of line 3, it is no longer clear if an invitation is forthcoming from Bee or if Bee meant to “just” inquire about Ava’s plans for the weekend. By reporting her plans for the weekend, Ava covers both interpretations at once: she is answering the informational question about her plans for the weekend, and she is letting Bee discover whether she (Ava) is available for getting together. If no invitation is offered by Bee, Ava is not vulnerable, since she did not officially take a stand on accepting or rejecting an invitation (she was just telling about her plans); if an invitation does get made by Bee, then Ava has made it clear what her prior “obligations” are. The sequence ends with no invitation or proposal to get together.

It is thus possible to see Ava as dealing with two interpretations of line 1: her first, which was a pre-invitation, and a second, which was an information-seeking question. The second interpretation was arrived at by reconstruction induced by line 3.

Given these specific instances of interactional reconstruction, we can now construct a more rigorous characterization of the phenomenon and the mechanism behind it.

The process of interactional reconstruction rests solidly on the foundational principle of the indeterminacy of meaning. According to this principle, every utterance has multiple, though limited, potential alternative meanings or interpretations. Any utterance can thus be retrospectively “mined”

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* It is possible to view a case like this one as an after-the-fact creation of misunderstanding; that is, Bee induces a shift in interpretation, which has the effect of making Ava’s first interpretation appear to be a misunderstanding, even if her interpretation was correct at the time line 1 was produced. It is because of this retroactively creative nature of meaning that we cannot always say whether something was a misunderstanding at the time it happened or not.

10 With the possible exception of highly formulaic phrases like “bye” or “Hello.”
for a new meaning that did not exist for the participants when the utterance was produced.

I do not mean to imply with this statement of indeterminacy that all utterances are ambiguous. An utterance is ambiguous if it has more than one interpretation for the parties involved at the time it is produced; this is a property of only some utterances. But all utterances have the property of indeterminacy, in the sense that a new meaning can be created for every utterance after it has already been interpreted once.

Although it is often difficult to empirically demonstrate a principle such as the indeterminacy principle, I think that the passages above, if they have been effective in documenting reconstruction, begin to provide some evidence that meaning is changeable and that multiple meanings can be “created” out of the same linguistic material in ordinary discourse as well as in specially crafted literary texts.

The mechanism of interactional reconstruction appears to be the following. Some number of people are engaged in a series of exchanges, the interpreted structural character of which projects which sorts of exchanges are compatible for at least the next few turns: an utterance interpreted as a compliment projects non-insulting talk; a series of utterances which are interpreted as starting a legitimate new spate of talk projects that subsequent utterances will be directed at the new topic or start yet another spate of talk; an utterance interpreted as a pre-invitation projects that some kind of acceptance/rejection will occur, as well as some response contingent on whether the invitee accepted or rejected. And then, one of the people involved produces an utterance which is in conflict with the structural expectations formed under the first interpretation: an insult is problematic with regard to the interpretation of something as a compliment; producing an utterance that is built to “continue” something started before the supposedly legitimate new talk is in direct conflict with that talk being “legitimate,” unless that talk has been brought to closure, in which case continuing it would be done differently (Fox, 1984); a discussion of how busy one is going to be over the weekend is in conflict with the possibility of an invitation.

When this conflict is encountered by the other people (or person), they identify the portion of discourse which was the source of the original interpretation (the compliment, the set of utterances forming a new topic, the pre-invitation) and create a new interpretation for that portion of discourse which could have produced as its natural structural projection the reconstructing utterance. That is, in the first passage above, Russ reconstructs Mother’s “Do you know who’s going to that meeting?” in a way which makes her later utterance fit; in the second passage, Ann and Carl reconstruct Mark’s “well more power to you” in a way that makes his later utterance structurally reasonable; in the third passage, Mark and Larry find a new analysis for the sequence that Larry started that makes Carl’s pronoun
an understandable next move; and in the fourth passage, Ava creates a new interpretation for Bee's "question" that is not in conflict with Bee's statement about having a lot of work to do. Thus, the compliment becomes an insult, the new talk becomes an interruption, the pre-invitation becomes an informational question. There is, then, a strong component in this process of re-aligning the interpretation of an earlier utterance so that it is not in conflict with what has come after.

Although none of the reconstructed items were in any way ambiguous when they were first produced, they end up being the source of more than one interpretation. This is possible of course because any given linguistic unit has potentially many meanings, and if the structure of the discourse changes, as it does in an unusual way in interactional reconstruction, then new interpretations are likely to accompany the change (meaning being entirely—or nearly entirely—dependent on the structure it is located within). In this way, interpretations which were not present on the first pass through come to be salient.

In this section I have tried to document and characterize the phenomenon of interactional reconstruction. In the next section I examine phenomena that might appear to be treatable as types of reconstruction but which in fact need to be treated separately.

1.2.3. Related Phenomena
Consider the following passage, which might at first appear to be an instance of interactional reconstruction:

(6)

1. A. Hello
2. B. Is Jessie there?
3. A. (No) Jessie’s over at her gramma’s for a couple days.
4. B. Alright thankyou.
5. A. Your welcome?
6. B. Bye.
7. A. Dianne?
8. B. Yeah,
9. A. OH I THOUGHT that was you,
10. A. Uh- she’s over at Granna Lizie’s for a couple days.
11. B. Oh okay,

Until line 7, this conversation seems to be a fairly routine telephone call: B calls A’s residence looking for Jessie and is told that Jessie is not home. B then (at line 4) initiates a closing to the conversation, which A appears to accept, so B continues (at line 6) with the last bit of the closing mechanism; a matching bye from A would at this point end the phone call. But instead of producing the expected bye, A abandons the closing sequence and checks
the identity of the caller. The interpretation of the conversation as almost ended must now be revised. In a very real sense, then, A’s utterance at line 7 causes a redirection of the on-going conversation; but it does not cause a reconstruction of the preceding utterances. Lines 4–6 are still clearly analyzable as bringing about the close of the conversation, even though that closing does not take place at the point one would have expected; there is no sense in which lines 4–6 need to be reanalyzed as something other than pre-closing utterances when A produces line 7. They simply project an event that does not yet take place.

Why is this passage not an example of reconstruction? The key is presented in Levinson (1983) in his discussion of a related example in which a new topic is brought up while the conversation is being closed:

(Levinson:322)

C: Okay, thank you.
R: Okay dear.
C: OH BY THE WAY, I’d just like to say

Levinson’s characterization of this passage supports the analysis of our earlier passage as redirection rather than as reconstruction:

But every now and then closing are in fact re-opened, and if these re-openings occur after the exchange of pre-closings, then they are typically marked as grossly misplaced... Such misplacement markers demonstrate an orientation to the closing section as a unit not properly taking such interpolations, and thus once embarked on, properly final. (p. 322)

In our example with Dianne, then, the identification of the caller is misplaced by virtue of occurring after the pre-closings. This example thus does not represent reconstruction because the utterance in question (line 7) is not in conflict with the actions projected by closing: it is marked as not belonging in the closing sequence. The talk is thus momentarily redirected away from the projected action of closing, but it does not change the nature of the pre-closing utterances. This passage should be contrasted with passage (4) above, which I have argued does exhibit reconstruction: in passage (4), the status of the topic initiated by Larry’s line 12 as a new and legitimate topic, following the close of a previous topic, is changed by Carl’s line 18, since a sequence cannot simultaneously be a legitimate new topic and an interruption; while in passage (6) it is possible for line 6 to simultaneously project that closing is about to take place and for closing to not then take

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11 It is probably also relevant that the closing word bye—at least in the structural slot it occupies in the passage above—has little in the way of potential meanings other than closing, so it would not be a good candidate for reconstructive processes; it would be difficult, if not impossible, to create a new interpretation for bye.
place. Crucially, in the latter case, the pre-closing utterance is not reinterpreted as something else—it remains a bid for closing.

Although inducing reconstruction can be a strategy for repairing misunderstanding, and although all repaired misunderstandings involve re-interpretation, it is not clear whether all repairs of misunderstandings involve reconstruction, as I have defined that term here. For example, a repair of misunderstanding that involves repeating or re-doing the misunderstood utterance does not necessarily fall directly into the category of reconstruction, since the repair in this case may be meant to replace, rather than to reconstruct, a prior utterance. Such cases may involve reconstruction if the re-doing requires the hearer to reanalyze the first try; on the other hand, if the hearer can simply respond to the second try without having to reinterpret the first try (which could be related to the extent to which the speaker designs the re-doing as 'a second try' rather than as just another turn), then it is not clear that the mechanism of reconstruction is operative.

The following example of this type of misunderstanding has been analyzed in detail by Schegloff (1976). In it, B, a high school student, is calling in to talk to a radio talk show host, A, to report a discussion he has been having with his high school history teacher. He and the teacher disagree on what should motivate American foreign policy:

(7)  
(Schegloff, 1976: 81)

1. B: And s- and ( ) we were discussing, it tur- it comes down,
2. he s- he says, I I you’ve talked with thi- si- i-
3. about this many times. I said, it comes down to this: =
4. = Our main difference: I feel that a government, i- the
5. main thing, is- th- the purpose of the government, is,
6. what is best for the country.
7. A: Mmhmm
8. B: He says, governments, and you know he keeps- he
9. talks about governments, they sh- the thing that they
10. should do is what’s right or wrong.
11. A: For whom.
12. B: Well he says--/he-
13. A: By what standard
14. B: That’s what- that’s exactly what I mean. he s- but he says...

According to Schegloff’s analysis, B misinterprets A’s line 11 as a clarification question (i.e., what’s right or wrong for whom) and responds at line 12 by beginning to report the teacher’s view. A, on the other hand, did not mean line 11 to be such a question; rather, line 11 was produced as a show of support for B and B’s position in the disagreement with the teacher (done by objecting to a point in the teacher’s argument). When A realizes that B has misinterpreted line 11, he does a second try at line 13. B responds
at line 14 in a way that shows he now understands what A is after. B has thus clearly changed his model of the interaction, but we do not have to say that he has reconstructed a new meaning for line 11; since line 13 is meant to re-try what was done at line 11, B could simply be responding to the new try, without reanalyzing line 11. Reconstruction is thus not a necessary component of this way of handling misunderstanding, although in some cases it could be present.

The processes we have examined here involve reinterpretation and adjustment of mental models, as does interactional reconstruction, but there are reasons to distinguish them from reconstruction, because each one involves a slightly different mechanism to accomplish its adjustment.¹²

1.3. IMPLICATIONS FOR DISCOURSE MODELS

Because interactional reconstruction deals with re-analyzing discourse that has already been analyzed, it has implications for at least two aspects of discourse modeling: how utterances are to be represented in short term memory; and, how we are to simulate the mechanisms for recognizing reconstructing discourse and for creating a new interpretation for a previously non-ambiguous piece of discourse.¹³ Since the focus of this paper has been on documenting the phenomenon of reconstruction, I will explore these theoretical implications only briefly. A fuller discussion must await further work.

There has been a compelling amount of research done in reading comprehension which suggests that pieces of discourse are stored (during real-time comprehension) in short term memory in at least two forms: format (one or two simple sentences stored at a time, see Glanzer, Dorfman, and Kaplan, 1981); and propositionally (van Dijk & Kintsch, 1983), where propositions reflect the meaning, but not the form, of the linguistic unit being stored. Given that part of the meaning of an utterance in conversation is the social action it is performing, it is relevant to ask if something about the social action is stored either as a portion of the proposition or along with the proposition in short-term memory. For example, would "Do you have a match?" which is clearly a request for a match and not just an informational question, be represented in something like the following way: (Give me match) (You have match)

¹¹ In fact, all of the processes dealt with in this section, although not the focus of this study, are as necessary a part of discourse modeling as reconstruction. It is essential that intelligent programs be able to recognize discourse patterns—such as closings—as they are being produced and that they be able to recognize when an instance of a particular pattern is being aborted and the expectations generated by the pattern frustrated. They should also be able to recover from a situation like this to recognize new patterns and generate new expectations.

¹² Of course, there are also implications for the nature of meaning and the philosophy of the social construction of reality, but these are beyond the scope of the present paper.
If the interactional meaning of an utterance is to be included in short-term memory (for a discussion of a related point see Gibbs, 1984), then we must determine how the process of changing that meaning should take place. Will the propositional representation be enough to allow for finding a new analysis of the utterance, or will we need to include some of the surface features of the utterance to accomplish that? Can we simply delete the “interactional” meaning of the utterance and replace it with a new one without altering the “informational” meaning of the utterance? Are these two types of meaning really separable? What happens to the original analysis of the utterance (e.g., is it simply flushed from the “buffer,” or is it stored somewhere else)?

Moreover, the constraints on the storage of surface and propositional representations currently discussed in the discourse comprehension literature may need further examination in light of some of the instances of reconstruction explored here. Consider again the relevant portion of the family dinner conversation:

1. Mother: Do you know who's going to that meeting?
3. Mother: I don't know.
4. Russ: Oh::: probably Mrs. McOwen (and detsa) and probably Mrs. Cadry and some of the teachers.

Let us suppose that upon hearing line 1 of this passage Russ constructs a model in which Mother is about to make an announcement about who is going to be at the meeting (which may be accompanied by imaging a room full of appropriate people), and, having thus constructed this model, he responds in what seems to be an appropriate way. Mother's line 3, however, clearly conflicts with the model Russ has so far constructed. Now here is the problem I see with the proposed constraints on short-term memory: how would Russ—given the fact that all he has left of the discourse is a model in which Mother is making an announcement—create a new interpretation for what has gone before, taking into account the fact that Mother's original utterance is now at a greater distance than one or two simple sentences and hence is no longer in short-term memory? Further, if we build on Jarvela's (1979) finding that format recall of discourse is extremely sensitive to clause boundaries and other measures of syntactic closure, it is not a large leap to suppose that subjects are also extremely sensitive to turn boundaries and sequence boundaries, such that if a given utterance is not only several sentences back but also several turns back, that utterance is not likely—according to current models—to still be in short-term memory. On the basis of what material, then, would Russ create a new meaning for line 1?

In the view put forward here, it is only his knowledge that such an utterance as line 1 can be used to perform two distinct types of actions—asking a question and making a pre-announcement—that allows him to go back, after
discovering that his first interpretation is wrong, to find the other likely interpretation. It thus seems critical to me to preserve in a theory of memory and discourse comprehension the notion that people can have access to specific utterances, or perhaps even their propositional representation, for longer than one or two simple sentences, even across turn boundaries and higher discourse-unit boundaries.

The problems raised for discourse management are also fairly numerous.

The work within natural language processing that most closely approximates the view of conversation as production and comprehension in real time is Reichman (1978, 1981). In this research, Reichman identifies a unit of structural organization (the context space) and describes how speakers build up large context space structures and maintain models of the conversation:

The underlying element of the analysis is a construct called a "context space." Roughly, a group of utterances that refers to a single issue or episode forms the basis for a context space. Superficially, a conversation is a sequence of utterances; at a deeper level it is a structured entity whose utterances can be parsed into hierarchically related context spaces.

As a conversation proceeds, each conversant builds a discourse model that includes the conversation's context space structure, a notion of the present discourse topic, and a list of items being focused upon. (1978:283)

Within this framework, linguistic devices (such as anaphora, tense, conjunction) are taken as signals of the type of context space being developed by a speaker and its relation to preceding context spaces. For example, according to Reichman, the phrase by the way is taken to signal an interruption of the on-going topic (although it can also signal that the utterance so marked is displaced from its usual slot for some reason other than interruption; see Schegloff & Sacks, 1973). Based on linguistic signals, then, a conversation is parsed on-line, and the results of the parsing (type of context space and relation to preceding context spaces) are passed to a database, which acts as a model of the on-going conversation. The machinery does not allow for multiple hypotheses about the structure of the conversation or for the wait-and-see approach for deciding between possible alternatives; moreover, there is no mechanism for changing the interpretation of one context space based on a later context space. Given the potential for reconstruction in natural human conversation, models that are meant to simulate this behavior will need to include some means for retroactively reinterpreting data that have already been processed, analyzed, and stored.

In order to provide a reinterpretation for previously analyzed data, intelligent systems will have to be able to work from overt behavior to a model of the conversation; that is, they will have to be capable of inducing what kind of model could have produced a particular type of linguistic behavior.
This type of induction is particularly difficult when the behavior being analyzed is in conflict with the model already constructed for the conversation, but this is exactly the state of affairs in the reconstruction passages explored here. It is therefore clear that we cannot have systems that create static representations for the user's model of the conversation; since the user's model will change over time (in part as a response to the system's behavior), we will need to have representations that can reflect such changes. Research currently being pursued in Intelligent Tutoring Systems is actively concerned with the related task of inferring students' changing models of a conceptual domain on the basis of the students' behavior in tutorial sessions (Sleeman & Brown, 1981); this work could serve as a foundation for the discourse modeling work suggested here (Woolf, 1984 is an especially useful link between the two areas).

Finally, of course, there are certain implications for our models of language production, as well as comprehension. We know that, at least for conversation, one person cannot formulate a mental plan for the structure of a particular conversation and carry it out intact; the non-unilateralness of conversation means that the course of the interaction can never be predetermined. The data explored in this study suggest a still more striking possibility: that a speaker can change the direction not just of his or her own future behavior, as we might naturally expect given the fact of non-unilateralness, but of his or her own past behavior. The ability to induce a reinterpretation of one's past utterances creates a degree of flexibility in planning and production that has not yet been fully appreciated. A robust, natural system should ultimately be capable of such flexibility.

1.4. CONCLUSIONS

This work is based on the premise that research into the nature of human–human communication will benefit not only our general theories of human communication but also our specific models of language processing within intelligent systems. John Seely Brown (n.d.) has made a particularly apt statement in this regard:

We have been misled into thinking that natural language, per se, is so powerful. Instead I think it is the dialogue process that is so powerful, e.g. the notion of conversational repairs that occur between two people. If we can understand this process and how to capture it in man-machine communication, we will have made a major breakthrough on the perceived friendliness of machines.

The point of all of this is that we cannot intuit how communication takes place, or how meaning happens, or how discourse models are constructed; we must look at what people actually do when they are engaged in these activities. Naturally-occurring conversations could thus serve as a major resource for research in cognitive science.
APPENDIX A

Notational Conventions in Transcripts

The following notational conventions are used in the transcripts:

// point at which current utterance is overlapped by the next utterance produced by another speaker.

(0.0) Numbers enclosed in parentheses indicate length of silence.

Underlining indicates stressed syllables

: lengthened syllable

- Glottal stop cutting off a word

= indicates a relationship between two utterances in which there is not the usual beat of silence between them.

? rising intonation

(( )) non-linguistic action

( ) unintelligible stretch

hh audible outbreath

'hh audible inbreath

(hh) laughter within a word

REFERENCES


