

8 | Grounding

Joint projects aren't easy to complete. Success on even a minimal joint project requires success on all lower levels of action as well. Take this exchange (8.2a.335):

Roger: now, - um do you and your husband have a j- car
Nina: - have a car?
Roger: yeah
Nina: no -

When Roger tries to ask Nina whether she and her husband have a car, she isn't sure she has heard his last phrase and queries it, "Have a car?" Only when that is cleared up does she take up his question with "No." For success on their joint project, Roger and Nina need success in attending to, hearing, and understanding each other. How do they reach that success? In Chapter 7, we saw how two people, in pursuing a joint project, arrive at a joint construal of what the speaker is to be taken to mean. In this chapter, we look more closely at what else it takes to assure success.

The hypothesis is that people try to *ground* what they do together. *To ground a thing*, in my terminology, *is to establish it as part of common ground well enough for current purposes* (Clark and Brennan, 1991; Clark and Schaefer, 1989; Clark and Wilkes-Gibbs, 1986). On this hypothesis, grounding should occur at all levels of communication. Recall the ladder of joint actions from Chapter 5:

	Speaker A's actions	Addressee B's actions
4	A is proposing joint project w to B	B is considering A's proposal of w
3	A is signaling that p for B	B is recognizing that p from A
2	A is presenting signals to B	B is identifying signals from A
1	A is executing behavior t for B	B is attending to behavior t from A

To succeed in their joint projects (level 4), A and B need to ground what A is to be taken to mean for B (level 3), and to do that, they need to ground what A is presenting to B (level 2), and to do that, they need to ground what behavior A is executing for B (level 1). Dealing with all these levels is simplified by two properties of action ladders – upward completion and downward evidence.

To see how grounding works, we must look beyond language use. There are general principles about how people discharge intentions in performing any action, both autonomous and joint actions. If so, they should also apply to signaling and recognizing, presenting and identifying, executing behaviors and attending to them.

Closure on actions

It is a fundamental principle of intentional action that people look for evidence that they have done what they intended to do. If I want to call an “up” elevator, I press the “up” button. I get immediate evidence that I have pressed the “up” button when I feel and see the button depress under my finger, and if I don’t, I try again. But I get evidence that I have *called* the elevator only if the “up” light goes on. If it doesn’t, or if there is no “up” light, I can’t be certain I have called the elevator, so I may press the button again and again and again. People tend to do just that when there is no “up” light. Why? Because they cannot verify that they have in fact called the elevator.

People need *closure* on their actions. The general principle, due to Donald Norman (1988), might be expressed this way:

Principle of closure. Agents performing an action require evidence, sufficient for current purposes, that they have succeeded in performing it.

To get closure on the action of calling an elevator, I look for evidence that I have succeeded. The principle applies to intentional actions of all types. As Norman has shown, it is crucial in the design of personal computers, television sets, cars, telephones, common appliances, and to disregard it is to foster misuse, frustration, failure. Telephone buttons

that don't beep when pressed, computer commands that don't change the display, and car turn signals that don't click – these invite failure because they don't allow users to get closure on their actions.

EVIDENCE OF CLOSURE

At the heart of the principle of closure is the idea that evidence of success must be “sufficient for current purposes.” What makes evidence sufficient?

Validity. Evidence of success must be valid to be useful. In practice this means it must be reliable and interpretable. For calling an “up” elevator, an “up” light wouldn’t be reliable evidence of success if it went on only sporadically or regardless of the button I pushed. And it wouldn’t be readily interpretable, even if reliable, if it went on only when I pressed the “down” button, or only on odd-numbered days. Most evidence is reliable only to some degree, and interpretable only to some level of confidence. An “up” light is strong evidence that an “up” elevator has been called, but an audible click somewhere in the elevator shaft only weak evidence. No perceptible change is ordinarily no evidence at all.

Economy of effort. Evidence must also be easy to get, economical in effort. What if the “up” light flashed on for only a tenth of a second, or only if I pressed the button for ten seconds? The evidence might be too costly. The one takes too much attention at the right moment, and the other too much work. Other things being equal, the less effort evidence takes to acquire, the better.

Timeliness. Evidence must also be timely. I want the “up” light on the elevator to go on when I press the “up” button and not five, ten, or twenty seconds later. Why? Because calling the elevator is part of a sequence of actions, each contingent on the completion of the last one. I must get closure on the current action before I can start the next. We might learn to live with “up” lights that had five-second delays, but we wouldn’t be happy about it.

The optimal evidence for completion isn’t usually the strongest, most economical, and most timely evidence possible, for that may be too costly. All we need is evidence “sufficient for current purposes.” Even that varies with our purposes. In manufacturing a toxic chemical, I may be willing to put a lot of effort in getting highly valid evidence of completion, even if it takes time to get. In calling an “up” elevator, I may be unwilling to work for evidence that isn’t immediately accessible. Each action has its own mix of evidence that is deemed sufficient.

LEAST EFFORT

The very notion of sufficiency rests on the idea that people prefer to conserve effort. They appear to adhere to this principle:

Principle of least effort. All things being equal, agents try to minimize their effort in doing what they intend to do.

In moving a box from one part of the kitchen to another, I wouldn't carry it to the dining room and then back to the kitchen. This principle has been used to account for a range of everyday phenomena. With closure, minimizing effort has an added twist. Ordinarily we think of effort as what it takes to carry out an action proper—e.g., to press the “up” button. But it takes additional effort to confirm that I have completed my action. In counting effort, we must include both the action proper *and* verification of its completion.

Many actions become complete only once some criterion is reached. Eating all the spaghetti on my plate means eating the spaghetti until it is all gone; further eating isn't part of the act. Filling a bottle with water means pouring water into the bottle until the bottle is full; pouring more water in isn't part of the act. We might call these *criterial actions*: They aren't complete until a criterion is met. Agents cannot perform them without adhering to the principle of closure. An inherent part of doing them is deciding when they are complete.

We treat many actions as criterial even when we don't have to. In waiting for an “up” elevator at a bank of elevators, I'm not forced to get on the first “up” elevator to come along. I could choose to wait for the second or fifth or fiftieth, or for the first one at the door I am standing next to. But if I am trying to minimize effort, I will treat “waiting for an ‘up’ elevator” as a criterial action, as if it were “waiting for the *first* ‘up’ elevator.” A corollary of the principle of least effort is this:

Principle of opportunistic closure. Agents consider an action complete just as soon as they have evidence sufficient for current purposes that it is complete.

If agents can treat an action as a criterial action, they will.

DOWNTWARD EVIDENCE AND HOLISTIC EVIDENCE

With action ladders, agents can exploit especially powerful forms of evidence. Let us return to the action ladder for getting an elevator (from Chapter 5):

Level	Action in progress from t_0 to t_1
5	A is getting an "up" elevator to come
4	A is calling an "up" elevator
3	A is activating the "up" button
2	A is depressing the "up" button
1	A is pressing the right index finger against the "up" button

By the principle of closure, Alan needs evidence that he has completed each of the five actions, and that seems like a tall order. Yet it isn't, because he can exploit the property of downward evidence: "In a ladder of actions, evidence that one level is complete is also evidence that all levels below it are complete." He needn't check separately for evidence at each level. If the "up" light goes on, he has evidence that he has succeeded not only at level 4, but also at levels 1, 2, and 3. He need only check on the highest level evidence available.

Agents can exploit a related principle for part-whole relations. Suppose I type "p" "r" "i" "n" and "t" into my computer as a command to print out a file. Did I really type the letter "i"? I have evidence that I did if the computer begins printing. The property is this:

Holistic evidence. Evidence that an agent has succeeded on a whole action is also evidence that the agent has succeeded on each of its parts.

These two properties – downward evidence and holistic evidence – give agents powerful ways of reaching closure. If they are trying to minimize effort, they should look for the most powerful evidence that is valid, cheap, and timely enough for current purposes. They should look for evidence at the highest level available and for the largest action attempted.

JOINT CLOSURE

The principle of closure applies as much to joint actions as to autonomous ones. You and I need evidence that we have succeeded in shaking hands or playing the first measure of our duet, or that I have succeeded in helping you on with your coat. Without such evidence, we may try the action again, or try to repair what went wrong, or stop before taking the next step – each disrupting our ongoing activity. What evidence do we need?

Recall that joint acts are performed by means of participatory acts by the participants. When Ann and Ben are rowing a canoe, there are three acts involved:

0. Ann-and-Ben's paddling a canoe includes 1 and 2;
1. Ann is paddling at the bow as part of 0;
2. Ben is paddling at the stern as part of 0.

Let's take Ann's point of view. She can get closure on "paddling at the bow" by seeing and feeling her paddle dip into the water with the right motion and pressure. But for closure on "paddling *as part of 0*" she needs evidence that Ben is doing his part as well. She hears him behind her paddling and feels the canoe surge forward with each stroke. She also realizes that Ben needs evidence that she is doing her part, which she assumes he gets from seeing her paddle and feeling the canoe surge with her strokes. Ultimately, the two of them try to reach joint closure (see Clark and Schaefer, 1989):

Principle of joint closure. The participants in a joint action try to establish the mutual belief that they have succeeded well enough for current purposes.

Ann and Ben try to get closure not only on their individual paddling, but on their joint rowing of the canoe. And that requires evidence that can serve as a shared basis for the mutual belief that they are succeeding. And by the principle of least effort, they will try to succeed with the least *joint effort*.¹

What I have argued so far is this. When we act intentionally, we seek evidence that we have completed what we set out to do. In that process, we try to minimize the total effort of both doing the act proper and confirming its completion. When our actions belong to action ladders or action wholes, we can use evidence in especially efficient ways. Because of the principle of least effort, we are opportunistic in carrying out our actions. We reach closure on them and go on to the next action just as soon as we have sufficient evidence they are complete. Joint actions are no different, for they too require closure. The question is how to reach closure.

Contributions

People in conversation ordinarily go to some effort to reach joint closure on their actions. As illustration, let us return to the exchange between Roger and Nina:

¹ For more discussion of least joint effort, see Clark and Wilkes-Gibbs (1986) and Schober (1995).

- Roger: now, - um do you and your husband have a j- car
 Nina: - have a car?
 Roger: yeah
 Nina: no -

When Roger finishes his first turn, he apparently thinks he has presented all Nina needs for recognizing what he means. Has he succeeded? No, as he learns immediately from Nina's "Have a car?" Apparently, she believes she has identified his utterance except for the last phrase, which she thinks is "have a car." Roger concludes that once he clears up her question "Did you say 'have a car'?" with "Yeah," she will have identified what he presented and understand what he meant. He gets evidence of her understanding when she answers "No." With that, the two of them reach the mutual belief that she has understood him well enough for current purposes. They reach closure on the joint act of signaling and recognizing.

What I have just illustrated is a *contribution* to discourse – a signal successfully understood. I will sometimes use contribution for the joint act of Roger and Nina completing the signal and its joint construal. Other times I will use it for Roger's participatory act, his *part* of that joint act, as when we speak of Roger's contribution to the discourse. When necessary, I will make clear which sense I mean. In either case, contributions require actions from both parties.

PRESENTATION AND ACCEPTANCE

Contributions are ordinarily achieved in two main phases. In the first phase of Roger's contribution, he presents Nina with an utterance. In the second, Nina provides evidence of what she does and doesn't perceive, identify, or understand until the two of them accept that she has understood him well enough for current purposes. It is natural to call these two phases the *presentation phase* and the *acceptance phase* (Clark and Schaefer, 1987a, 1989). They are characteristic of contributions to conversation.

It is through these two phases that participants reach closure for each signal and its recognition. The two phases work like this (assume A is male and B is female):

Presentation phase. A presents a signal s for B to understand. He assumes that, if B gives evidence e or stronger, he can believe that B understands what he means by it.

Acceptance phase. B accepts A's signal s by giving evidence e' that she believes she understands what A means by it. She assumes that, once A registers e', he too will believe she understands.

In this terminology, A presents an action, a signal, for B to understand, and B, in turn, eventually validates that action, that signal, as having been recognized or understood. When these two phases are done properly, they constitute the shared basis for the mutual belief that B understands what A means by signal *s*. And with that A completes his contribution to the discourse.²

What distinguishes this model is the requirement of positive evidence. In traditional accounts, Roger could assume that Nina understood him unless there was evidence to the contrary – *negative evidence* (see Grosz and Sidner, 1986; Litman and Allen, 1987; Stalnaker, 1978). But by the principle of joint closure, contributors require *positive evidence* that their partners have understood what they meant. Roger can assume Nina has understood him only when he sees positive evidence of understanding. If so, contributors should look for positive evidence, and their partners should try to provide it. And they do.

Positive evidence most often comes from signals by the respondent – utterances, gestures, manifesting actions (see Chapter 6). These signals divide into four main classes:³

1. *Assertions of understanding*. When Roger presents an utterance, Nina can respond “uh huh” or “I see” or “m” or nod or smile. With these signals, she *asserts* that she understands Roger and expects him to accept her claim.
2. *Presuppositions of understanding*. When Nina takes up Roger’s proposed joint project, she *presupposes* that she has understood him well enough to go on. So uptake, or initiating the relevant next turn, is a signal of understanding (Chapter 7).
3. *Displays of understanding*. When Nina takes up Roger’s proposed joint project, she is also ordinarily *displaying* parts of what she has construed him to mean (Chapter 7). An answer, for example, displays in part how she construed his question.
4. *Exemplifications of understanding*. In the right circumstances, Nina can also *exemplify* what she has construed Roger to have meant. She

² For computational formalizations of collaborating on contributions, see Edmonds (1993), Heeman (1991), Heeman and Hirst (1992), and Hirst, McRoy, Heeman, Edmonds, and Horton (1994), and for a computational theory of grounding, see Traum (1994).

³ In aviation, the Federal Aviation Administration has mandated that pilots and air traffic controllers use certain of these signals (e.g., “readbacks”) in all conversations (Morrow, Lee, and Rodvold, 1993; Morrow, Rodvold, and Lee, 1994)

might offer a paraphrase or verbatim repetition, grimace, look disappointed, or perform some other iconic gesture. In each case Roger is able to check her exemplification for an acceptable construal.

Displays and exemplifications tend to be more valid evidence than assertions and presuppositions. When I give instructions to a ten-year-old boy, and he merely asserts or presupposes understanding, I may doubt whether his criterion is up to mine. He is more convincing when he displays what he has understood. It is like a school examination. I am better off asking him “What is the capital of Alaska?” than “Do you know the capital of Alaska?” If he answers yes to the second question, can I really be sure he knows?

Positive evidence may also come in the form of symptoms – spontaneous reactions. Roger may say something to cause Nina to blush, look startled, or get angry, revealing her construal of what he is saying. If she is startled by a comment she shouldn’t have been startled by, Roger can suspect a misconstrual, identify it, and repair it.

In this model, all contributions eventually get completed with positive evidence judged sufficient for current purposes. The two most common types of contributions are accomplished solely with positive evidence – they are trouble-free, without hitches, without explicit problems to repair. I will call them *concluded* and *continuing contributions*.

CONCLUDED CONTRIBUTIONS

In concluded contributions, A presents a signal that B accepts by presupposing understanding – by initiating the next contribution at the same level as A’s contribution. Take Alan asking Burton a question (1.2b.1433):

Alan: and what are you then
 Burton: I'm on the academic council
 Alan: ah very nice position

Alan initiates his contribution by presenting the utterance “and what are you then.” Burton immediately gives evidence of understanding by construing the utterance as a question, taking it up, and answering it, “I’m on the academic council.” The evidence is of three types:

1. Burton passes up the opportunity to ask for clarification. He thereby implies he believes he understands what Alan meant.
2. Burton initiates an answer as the next contribution. He thereby displays that he has construed Alan as having asked a question.
3. Burton provides an appropriate answer. He thereby displays his construal of the content of Alan’s question.

With 2 and 3 Burton gives Alan the opportunity to check on his construal of Alan's utterance. If Alan doesn't accept that construal, he can repair it – "No, I meant..." In fact, he accepts it by taking up Alan's assertion with "ah very nice position."

Alan and Burton reach joint closure on Alan's contribution entirely by means of downward evidence. When Burton takes up Alan's question, he provides Alan with evidence that he has agreed to take up his question (at level 4). In a ladder of joint actions, evidence of success at level 4 is also evidence of success at levels 1, 2, and 3. The two of them can conclude that Burton has succeeded in attending to, identifying, and understanding Alan's utterance as well.

CONTINUING CONTRIBUTIONS

In continuing contributions, A presents a signal that B accepts by asserting understanding with a backgrounded acknowledgment like "m" or "uh huh" or a nod or a smile. Take this example (1.1.90):

- Sam: I wouldn't want it before the end of June anyhow Reynard, because
 I'm going to Madrid, . on the tenth and coming back on the twenty-
 ninth, - *u:h*.
 Reynard: ***I see***
 Sam: I *shall*
 Reynard: ***yes***
 Sam: not be away from home then until at any rate the end of -
 Reynard: **m**
 Sam: about the end of August -- so any time in July and August but u:h
 Reynard: **yes**
 Sam: not too far into August if *possible*
 Reynard: ***no***

Although Sam is talking throughout, in the background Reynard is adding acknowledgments – "I see," "yes," "m," and "no." The first two lines have the following structure:

Presentation phase

- Sam: I wouldn't want it before the end of June anyhow Reynard, because
 I'm going to Madrid, . on the tenth and coming back on the twenty-
 ninth, - *u:h*.

Acceptance phase

- Reynard: ***I see*** - yes

With “I see - yes” Reynard asserts that he has understood Sam’s last utterance, and once Sam accepts that acknowledgment, Sam’s contribution is complete.

Continuing contributions are useful precisely because they allow A to keep talking, contributing to the conversation, with minimal disruption from B. They achieve this through these five features (again, assume that A is male and B is female):

1. *Acknowledgments.* B’s simplest acknowledgments comment explicitly on her understanding of A’s utterance. Reynard’s “I see” means “I understand what you are saying,” and “m” means “Yes, I understand what you are saying.” Others, called assessments, are really uptakes to A’s assertions, as with “gosh,” “really?” “oh,” and “good God” (Goodwin, 1986a), and by downward evidence, they imply understanding as well.
2. *Scope.* B generally marks the part of the total utterance she is accepting by placing her acknowledgment at or near the end of that part. Reynard accepts “so any time in July and August” by uttering “yes” after it and before the proper start of the next clause.
3. *No turns.* B generally accepts what A says without taking a turn. Reynard acknowledged Sam’s utterances without taking the floor.
4. *Overlapping speech.* B often shows she doesn’t intend to take a turn by overlapping her acknowledgments with A’s speech.
5. *Backgrounding.* Acknowledgments are marked as backgrounded, as less prominent than the speech around them. When spoken, they are brief – *m* and *uh huh* are the commonest ones in British and North American English – and are delivered with reduced volume. When gestured, they are also simple and brief, as with nods and smiles.

These five features enable acknowledgers to do their work while letting the contributors get on with theirs.

A variant of the backgrounded acknowledgment is the *unison completion*, as in the last line of this example (Tannen, 1989, p. 60):

- Deborah: Like he says that he says that American*s...*
 Chad: *Yeah*
 Deborah: or Westerners tend to be u:h ... think of the body and the soul as two different th*ings,*
 Chad: *Right.*
 Deborah: because there's no word that expresses **bo*dy and soul together.***
 Chad: ***Body and soul together.*** Right.

When Deborah finishes her utterance “body and soul together,” Chad finishes it in unison with her. He gives positive evidence of understanding by showing that he is following her closely enough to complete her utterance with her. Like Chad’s “yeah” and “right,” the unison completion is backgrounded and designed not to take the floor.

So contributions are joint actions that require individual actions from both contributors and their partners. A presents a signal for his partner B to recognize, and then the two of them work jointly to accept that she has understood what he meant well enough for current purposes.

Patterns of contributions

Contributions become more complicated when there are problems of joint closure. The acceptance phase often gets expanded when B has trouble understanding A’s presentation, and that leads to a hierarchical form. The presentation phase often gets expanded when A anticipates B will have trouble understanding it. A may divide it up, making that hierarchical too. Both phases get expanded because of the principle of joint closure along with the properties of upward completion and downward evidence.

UPWARD COMPLETION

When Roger says to Nina “now, - um do you and your husband have a j- car” the two of them are performing a ladder of joint actions:

- Level 4** Roger is proposing to Nina that she tell him whether she and her husband have a car.
- Level 3** Roger is asking Nina whether she and her husband have a car.
- Level 2** Roger is presenting the signal “now do you and your husband have a car?” for Nina to identify.
- Level 1** Roger is articulating the sequence of sounds “now, - um do you and your husband have a j- car” for Nina to attend to.

By the property of upward completion, Roger and Nina may complete level 1 without completing level 2, level 2 without level 3, and level 3 without level 4. For any piece of A’s attempted contribution, partner B may be in any one of these states:

- State 4** B is considering taking up A’s proposed joint project.
- State 3** B has understood what A meant by his utterance (but isn’t in state 4).
- State 2** B has identified A’s presentation correctly (but isn’t in state 3).
- State 1** B has noticed that A has executed a presentation (but isn’t in state 2).
- State 0** B hasn’t noticed that A has executed some communicative behavior.

In reality, B is often in a mixed state. Immediately after Roger's presentation, Nina was in state 3 for most of the utterance but in state 1 for the last phrase. By the joint closure principle, they need evidence that she is in at least state 3 for the entire utterance.

When B isn't in state 3 for the full presentation, according to the joint closure principle, she should initiate a process that will bring her to state 3. She should initiate a repair. When she is in state 1, she can do that with "pardon" or "what?" or "m?" as here (7.2.481):

- A: ((where are you))
- B: **m?**
- A: **where are you .**
- B: well I'm still at college .

B's "m?" leads A to believe B has noticed A's presentation but hasn't identified it, so A repeats it in its entirety. When B is in state 2, she can pinpoint what she doesn't understand and ask about it, as here (9.1.1133):

- A: can I speak to Jim Johnstone please?
- B: **senior?**
- A: **yes .**
- B: yes ---

With "Senior?" B presupposes she has identified the entire presentation and has understood everything except which Jim Johnstone A was referring to. Most such signals, then, have two parts: (1) a presupposition of what was understood; and (2) a query about what was not understood. They are designed to resolve the misunderstanding as efficiently as possible.

Repairs initiated by partner B lead to acceptance phases with embedded contributions. In the last example, A's main contribution, his request to speak to Jim Johnstone, looks like this:

- Presentation phase*
- A: can I speak to Jim Johnstone please?
- Acceptance phase*
- B: senior?
 - A: yes .

But the acceptance phase itself contains a question and answer, a minimal joint project, and both of these parts have their own presentation and acceptance phases. B's "Senior?" is the presentation phase of a question, for if A didn't hear it, he could say "Pardon?" to get B to repeat

it. A does hear and understand it and makes it a concluded contribution by initiating the answer “Yes.” Even that is a presentation, for if B didn’t hear it, she could ask “Pardon?” to get A to repeat it. The embedded question and answer is a side sequence (Jefferson, 1972)—the commonest and most powerful device two partners have for clearing up troubles in acceptance phases.

Repairs can also be initiated by the original contributor after seeing a misunderstanding in the partner’s uptake. Here is an example of a *third-turn repair* (4.2.298):

- B: k- who evaluates the property ---
- A: u:h whoever you asked, . the surveyor for the building society
- B: **no, I meant who decides what price it'll go on the market -**
- A: (- snorts). whatever people will pay --

B asks A a question, and A takes it up, displaying his understanding of the question. But A’s display reveals a misconstrual, which B proceeds to correct, “No, I meant...” A then takes up the same question, but now with a revised construal.

Every signal is part of a presentation phase of a projected contribution. Even the briefest utterances, like “Pardon?” and “Yes” and “Uh huh,” are open to misunderstanding and need to be accepted. But speakers don’t present brief utterances like these unless they are confident there won’t be trouble. If they had expected trouble, they would have formulated something more elaborate. Almost all minor utterances like this emerge in concluded or continuing contributions. In the contribution model, all acceptance phases must end with positive evidence, with concluded or continuing contributions. If they didn’t, they would go on forever.

COMMUNICATIVE PROBES

Some actions are *probes* carried out with the expectation that they may not succeed. I enter a public building on a Sunday and wonder if the elevators are working. So I press the “up” button, and when the “up” light doesn’t go on, I conclude the elevators aren’t working. I reason: “I have evidence of completing the ladder of actions to the level of pressing the ‘up’ button but not beyond. And since pressing the button doesn’t call an elevator, the elevators must not be working.” I apply the same logic to failures as I do to successes.

Communicative probes can fail in the analogous way at any of the four levels of action.

1. Hearing. When I enter my house, I call out “Is anyone home?” and get no answer. My probe is an attempt to get anyone hearing me to arrive at level 4, but it has failed to get anyone even to state 1. My son may actually be home, but unable to hear me because he is listening to music on earphones. Think of yelling “Help” in the woods, ringing a doorbell, or telephoning a friend.⁴

2. Identification. In Tokyo, I get lost and say to a passerby “Do you speak English?” She looks blank, and we turn away in frustration. My probe is an attempt to ask her a question, but it fails to get her beyond state 1.

3. Reference. At a party, I ask a friend “Which of those women is Nina Searles?” and he replies “Sorry, I don’t know who Nina Searles is.” I have tried to refer to Nina Searles, but have failed to get him beyond state 2 for that reference.

4. Joint project. At the same party, I ask my friend “Who is that?” and he replies, “I don’t know.” I have tried to get him to tell me who that person is, but have failed to get him beyond state 3 to take up the proposed joint project.

With each probe, I presented an utterance realizing it might not succeed. And each time I was as informed by the failures as I would have been by the successes. Probes like these cannot be accounted for without the logic of upward completion and downward evidence.

PACKAGING

Packaging is always an issue in contributing to discourse: How large a contribution should the two participants try to complete if they are to minimize their joint effort? If there were a presentation and acceptance phase for each word separately, conversation could double in length. On the other hand, if each contribution were a paragraph long, a minor misunderstanding at the beginning might snowball into a major misunderstanding by the end. With limited working memory for what the speaker said, the two people would have great trouble repairing it. The optimal size of a contribution ought to be somewhere in between.

Participants, in fact, vary the size of these packets depending on their skills and purposes. When the going is easy, they make their packets large, but when the going gets tough, they make them smaller, sometimes no more than a word long. When contributors have complicated

⁴ One day, I called out “Is anyone home?” and my son replied “What?” The probe elicited the information I wanted without getting him past state 1.

information to present, they can present it in *installments*. Here Darryl is giving June his London address (9.2a.979):

- June: ah, what ((are you)) now, *where*
- Darryl: *yes* forty-nine Skipton Place
- June: forty-one
- Darryl: nine . nine
- June: forty-nine, Skipton Place,
- Darryl: W one.
- June: Skipton Place, . W one, ((so)) Mr D Challam
- Darryl: yes
- June: forty-nine Skipton Place, W one,
- Darryl: yes
- June: right oh.

Darryl has packaged his address in two installments, then June reconfirms his name and address in two more installments.

Each installment is a separate contribution. It begins with the contributor presenting a chunk of information and pausing to invite the partner to respond, and it ends with the two of them accepting that the chunk has been understood. Darryl's first installment looks like this:

Presentation phase

- Darryl: forty-nine Skipton Place

Acceptance phase

- June: forty-one
- Darryl: nine . nine
- June: forty-nine, Skipton Place,

Darryl presents a number and street name and stops. June then displays "forty-one," giving Darryl a chance to check it. He does and corrects the second digit. June then repeats the whole street address, which Darryl accepts by going on to his second installment. June's two installments work the same way.

Darryl's two installments "forty-nine Skipton Place" and "W one" together form the presentation phase of a more inclusive contribution. June helps create it by reconfirming the information of the two installments together – even though she does that in installments. The presentation and acceptance of Darryl's name and address form an even more inclusive contribution, for June's "right oh" claims an understanding not just of Darryl's last installment, or even of his last two installments, but of the entire name and address.

Speakers divide presentations into brief repeatable installments because they tacitly recognize that people have limited immediate memory spans. Speakers often use installments, for example, to help addressees register addresses, telephone numbers, and recipes verbatim, and perhaps write them down (Clark and Schaefer, 1987a; Goldberg, 1975). The telephone company recognizes this when it divides telephone numbers into conventional packets of three or four digits.

Speakers also use installments in giving instructions – to make sure their partners understand each step before going on. In this example, Jane is giving Wendy directions to a professor's office (8.1j.782):

Wendy: and where do I go to, .
 Jane: t's l s u:h do you know Pan-American College,
 Wendy: **yes**.
 Jane: u:m it's Lester Court, - which if you come in the Salad Street side, .
 Wendy: **yeah**, .
 Jane: and through the gate, .
 Wendy: **mhm**,
 Jane: and, about a hundred yards ahead, there's an archway on the right,
 Wendy: **yeah**, .
 Jane: [continues]

Jane gets Wendy to confirm that she understands the first leg, then the second leg, and so on through her directions.⁵ Installment presentations are useful in quite ordinary descriptions, as in Anna's answer to Burton's "How was the wedding?" (7.3l.1441):

Burton: how how was the wedding -
 Anna: oh it was it was really good, it was uh it was a lovely day
 Burton: yes
 Anna: and . it was a super place, . to have it . of course
 Burton: yes -
 Anna: and we went and sat on sat in an orchard, at Grantchester, and had a huge tea *afterwards (laughs -)*
 Burton: *(laughs --)* .
 Anna: **uh**
 Burton: **it does** sound, very nice indeed

By presenting her description in installments, Anna gets Burton to help her complete her extended answer without interruption (see Schegloff, 1982).

⁵ For related examples see Geluykens (1987, 1988, 1992) and Ono and Thompson (1994).

Installment contributions are like continuing contributions, but with a difference in who is in control. In both, contributors present utterances that are accepted with responses like “yes” and “uh huh.” In continuing contributions, the partners are largely in control. The contributors may expect and look for acknowledgments as they go along, but it is the partners who decide where to place them and complete a contribution. In installment utterances, it is the contributors who are most in control. They fix the size of each installment by choosing when to invite their partners to respond. Responses to continuing presentations tend to overlap with the end of the contributor’s presentation, but responses to installments don’t.

ACTIONS MIDUTTERANCE

Packaging in presentations can take other forms as well. I will illustrate with collaborative completions, truncations, fade-outs, and constituent queries.

Although speakers usually try to present entire utterances for their partners to accept, they don’t always succeed. Sometimes they get part way when their partners offer a completion, as in this example from a conversation about tape recorders (Lerner, 1987):

- Marty: Now most machines don’t record that slow. So I’d wanna- when I make a tape,
- Josh: **be able tuh speed it up.**
- Marty: Yeah.

Marty presents “So I’d wanna - when I make a tape,” and then stops, perhaps looking for a way to express what he wants to say next. Josh then offers a plausible completion “be able tuh speed it up.” Apparently it is what Marty intended, because he agrees to it with “yeah.” Josh’s contribution is a *collaborative completion* (Goodwin and Goodwin, 1986; Grimshaw, 1987; Lerner, 1987; Wilkes-Gibbs, 1986).

Collaborative completions, like other contributions, have presentation and acceptance phases. When Josh initiated his completion “be able tuh speed it up,” he was accepting Marty’s presentation so far. He was passing up the opportunity to ask for clarification. More than that, he was showing just how well he understood what Marty meant: He was offering an appropriate way to complete Marty’s thought, his assertion. But Josh’s utterance “be able tuh speed it up” is itself a presentation, and Marty explicitly accepts it with “Yeah.” Completions are often accepted or rejected explicitly.

What is the status of an accepted completion like Josh's? There are two contributions here. Josh contributed the proposition of "being able to speed the tape recorder up": That proposition was presented and accepted. Still, it was Marty who asserted that he'd want to be able to speed it up. That was *his* contribution. The one contribution contains the other as its part.

Truncations and *fade-outs* are the opposite of completions. With truncations, partners interrupt contributors part way through their presentations – truncating the presentations – because they think they understand already and don't need any more. Eve and Herb are in a car on a rainy Dutch day, waiting at a stop light, when they see a woman with an umbrella cross the street in front of them. Fifteen minutes earlier, they had talked about bringing a second umbrella for Herb:

Herb: Where's the other -
 Eve: **On the back shelf.**
 Herb: Good.

Herb presents part of what he intended, but Eve initiates her uptake before he is done. In doing so, she shows she believes she understands what Herb is asking. Herb completes the process by accepting her answer.

In other truncations, contributors invite their partners to interrupt as soon as they understand (see also Clark and Schaefer, 1987b; Goodwin, 1987; Goodwin and Goodwin, 1986; Jefferson, 1973), as here (1.4.887):

Justin: this Polly, . you know that girl, whom I've- I m- I m m presented . a rather
 absurd report in a way, that genuinely represented what I felt, I said she
 might
 Ken: *who's that*
 Justin: fail? or get a two A, do you remember? at the end? I thought she'd
 get further than two B, do you know her?
 Ken: ***oh yes, . yes, well ((3 to 4 syllables))***
 Justin: she's a very funny girl

Justin presents one description of Polly after another until Ken interrupts with a recognition of who he is referring to. With that Justin truncates his presentation and goes on to his next contribution "she's a very funny girl."

With fade-outs, contributors truncate presentations on their own – they fade out – and their partners accept the presentations as understood anyway. Here is an example (Lerner, 1987):

Barbara: and uh but then she says she gets to thinking, oh well she's just not gonna worry about it.

Alan: Mm hm.

Barbara: you know, **she's just gonna--**

Alan: yeah

With “you know, she’s just gonna - -” Barbara deliberately leaves her presentation incomplete. Alan accepts Barbara’s presentation as having been understood anyway. Fade-outs are especially useful when the rest of the presentation is too embarrassing or touchy to make public.

Another way of grounding mid-utterance is with *trial constituents*. Sometimes speakers find themselves about to present a name or description they aren’t sure is correct or comprehensible. They can present that constituent – often a noun or noun phrase – with what Sacks and Schegloff (1979) have called a *try marker*, a rising intonation followed by a slight pause, to get their partners to confirm or correct it before completing the presentation, as here (3.2a.59):

Morris: so I wrote off to . Bill, . uh who ((had)) presumably disappeared by this time, certainly, a man called **Annegra?** -

June: **yeah, Allegra**

Morris: Allegra, uh replied, . uh and I. put. two other people, who'd been in for . the BBST job . with me [continues]

In the middle of his presentation, Morris apparently becomes uncertain about the name *Annegra*, so he presents it with rising intonation and a slight pause. June responds “yeah” to confirm she knows who he is referring to, then corrects the name to “Allegra.” Morris accepts the correction by re-presenting “Allegra” and continuing on. The entire check and correction is deft and brief. The local contribution looks like this:

Presentation Phase

Morris: **Annegra?** -

Acceptance Phase

June: **yeah, Allegra**

But this contribution is embedded within A’s larger presentation of “a man called Allegra replied.”

Mid-utterance queries can also be initiated by the partner, as in the telephone conversation between Jane and Kate (Chapter 7):

Jane: u:m Professor Worth said that, if . Miss Pink runs into difficulties, . on Monday afternoon, . with the standing subcommittee, . over the item on Miss Panoff, ---

Kate: **Miss Panoff?**

Jane: **yes,**

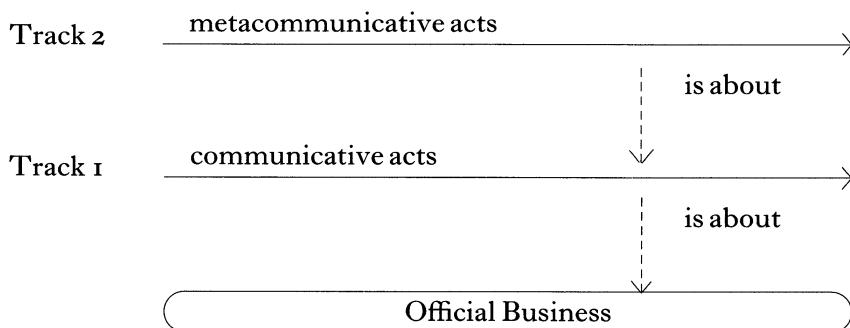
Jane: that Professor Worth would be with Mr Miles all afternoon, - so she only had to go round and collect him if she needed him, ---

Kate and Jane confirm a name ("Miss Panoff?" "yes") while Jane goes on hardly missing a beat.

Contributions are therefore hierarchical. Both the presentation and acceptance phases may themselves contain contributions, each with its own briefer presentation and acceptance phases. What is remarkable is the many different forms these embedded contributions come in – side sequences, installment utterances, collaborative completions, fade-outs, truncations, trial constituents. Each is shaped by the purpose it serves.

Collateral communication

By the grounding hypothesis, talk consists of two parallel tracks of actions. Officially, Roger is trying to get Nina to tell him whether she and her husband have a car. At the same time, the two of them are trying jointly to construct a successful communicative act. They talk to accomplish both. I will refer to these as *track 1* and *track 2*, and I will speak of *track 2* as *collateral* to *track 1*. The difference between the two tracks is subject matter. *Track 1* represents attempts to carry out official business, and *track 2*, attempts to create a successful communication. Put differently, *track 1* contains the basic communicative acts, and *track 2* contains *meta-communicative acts* – acts about the basic communicative acts. We might picture the tracks this way:



Although it is helpful to think of the two tracks as talk and meta-talk, these terms aren't precise enough for the work they have to do.

The contrast between the two tracks isn't a mere abstraction: There are concrete signals in both tracks. Compare these two exchanges:

Speaker	Track 1	Track 2
Waitress:	What'll ya have girls?	
Customer:	What's the soup of the day?	
Waitress:	Clam chowder	
Customer:	I'll have a bowl of clam chowder and a salad with Russian dressing.	
Roger:	now, - um do you and your husband have a j- car	
Nina:		- have a car?
Roger:		yeah
Nina:	no -	

Although both exchanges consist of a question and answer with a side sequence in between, the two side sequences serve different functions. The first ("What's the soup of the day?" "Clam chowder") deals with the waitress's and customer's public business – ordering food. The second ("Have a car?" "Yeah") deals with Roger's and Nina's communicative act – getting Roger's utterance correctly identified and understood. The first has to do with official business, and the second, with the signals by which the business is done.⁶

When we think of language use, we tend to think of track 1 – of talk about the business at hand, the topic of conversation. But talk about talk is still talk. Take the side sequence in Roger and Nina's exchange:

Nina: - have a car?
Roger: yeah

Although it is in track 2, it is still an adjacency pair – a minimal joint project with a proposal and uptake. It is just that its subject matter is Roger's utterance. What we really have is this:

Proposal: Did you utter "have a car"?
Uptake: Yeah, I uttered "have a car."

These two contributions are built on quotations, or demonstrations, of the talk being referred to.

Talk in track 2 isn't a homogeneous category. Its subject matter can

⁶ Roger's "um" is not official business, a point I take up in Chapter 9.

be any level of communicative acts in track 1. With “Have a car?” “Yeah,” Nina and Roger addressed Roger’s presentation (level 2), but they could instead have addressed his execution (level 1), meaning (level 3), or proposal (level 4). In Chapter 9, I will take up collateral signals about levels 1 and 2. Here I consider collateral signals directed at meaning and understanding (level 3).

COLLATERAL PROJECTS

Whenever contributors present a signal in track 1, according to the principle of joint closure, they are tacitly asking, “Do you understand what I mean by this?” and their respondents are expected to take them up. They are carrying out these actions in track 2. Consider a continuing contribution from an earlier example:

	Utterance	Track 1	Track 2
A:	it was uh it was a lovely day	1. [I assert] it was a lovely day	1. [Do you understand this?]
B:	yes	2. [I ratify your assertion]	2. yes [I understand that].

(The interpretations in square brackets are those not directly expressed in the speaker’s words.) In track 1, A is asserting to B that it was a lovely day, and B doesn’t demur. But what does B mean by “yes”? It isn’t “Yes, it was a lovely day,” but “Yes, I understand what you mean by that.” “Yes” is B’s uptake of the implied question, “Do you understand what I mean by this?” Here is a minimal joint project (question plus uptake) in track 2.

The claim is this: Every presentation enacts the collateral question “Do you understand what I mean by this?” The very act of directing an utterance to a respondent is a signal that means “Are you hearing, identifying, and understanding this now?” This is one goal of the presentation phase, and one goal of the acceptance phase is to take up that question. Respondents complete the joint project immediately when they answer or imply “yes”; they alter it when they initiate a repair sequence that implies “no.” Although the claim may seem radical, it is just a concrete form of the grounding hypothesis—that the participants in a conversation try to ground what they say. And it provides a rationale for the presentation and acceptance phases of contributions.

Many joint projects in track 2 are initiated by the contributor in track 1, as in these extracts from earlier examples:

Type	Example	Joint project in track 2
Continuing contribution	A: it was uh it was a lovely day B: yes	1. [Do you understand this? 2. yes [I understand that]
Concluded contribution	A: and what are you then B: I'm on the academic council	1. [Do you understand this? 2. [I understand you as displayed in my answer]
Installment	A: if you come in the Salad Street side, . B: yeah	1. [Do you understand the directions so far? 2. yeah
Third-turn repair	A: no, I meant who decides what price it'll go on the market- B: (- snorts) . whatever people will pay - -	1. no, I meant who decides what price it'll go on the market - 2. [I understand as displayed here]
Fade-out	A: you know, she's just gonna - - B: yeah	1. [I am sure you understand without my completing this] 2. yeah [I understand]
Constituent query	A: Annegra? B: yeah, Allegra	1. [Confirm that you understand] Annegra 2. yeah, [I understand, but the name is] Allegra

Other collateral projects are initiated by the respondent in track 1, as in these extracts:

Type	Example	Joint project in track 2
Second-turn repair	A: senior?	1. [Do you mean Jim Johnstone senior?] 2. yes, [I mean that]
	B: yes	
Collaborative completion	A: be able tuh speed it up	1. [Do you mean], be able to speed it up
	B: yeah	2. yeah, [I mean that]
Truncation	A: on the back shelf	1. [I understand you as displayed in this answer]
	B: good	2. [I accept your construal]

In every case A and B create a joint project in track 2 that deals with what A meant and B construed A as meaning.

Tracks are recursive. Every collateral track can have its own collateral track. Here is an illustration from an earlier example:

Utterance	Track 1	Track 2	Track 3
D: forty-nine Skipton Place	1. [The address is]forty-nine Skipton Place	1. [Confirm that you heard] “forty-nine” Skipton Place”	
J: forty-one	2. [I ratify the address as] forty-one	2. [I heard] “forty-one”	1. [Did you present] “forty-one”?
D: nine . nine			2. [No, the “one” is] “nine”
J: forty-nine	2'. [I ratify the address as] forty-nine	2'. [I heard] “forty-nine”	

When June says “forty-one” she is displaying in track 2 what she thought Darryl said. But because she is wrong, Darryl corrects her with “nine . nine” in track 3. If she hadn’t heard and said “what?” she would have started track 4. Participants add collateral tracks as needed, but rarely go beyond track 2.

FORMS OF COLLATERAL SIGNALS

In the study of language, much attention has been paid to signals in track 1 – words, sentences, iconic and pointing gestures – and almost none to signals in track 2. One reason is clear. Collateral signals, which are hard enough to identify in spontaneous talk, do not occur in citation forms, the favorite medium for studying language. Yet they are real.

The collateral signals just surveyed all have to do with meaning and understanding. All of them fit these frames or their variants:

Speaker	About contributor's meaning	About respondent's understanding
Contributor:	By x, I mean y. By x, what do you understand?	By x, do you understand y?
Respondent:	By x, do you mean y? By x, what do you mean?	I understand x. By x, I understand y.

All of these frames express either what the contributor means or what the respondent understands the contributor to mean. And they are all in the present tense, because they are directed at states of meaning and understanding at the moment of utterance.

These frames represent what speakers mean by these collateral signals, but what form do the signals actually take? *A priori*, we might expect them to exhibit four features:

1. *Backgrounding*. Signals in track 1, which are about the participants' official business, should be prominent. Signals in track 2 should be backgrounded.

2. *Simultaneity*. If the participants in a conversation take actions in both tracks at the same time, they should be performing signals in both tracks simultaneously. Two participants, A and B, might manage this in several ways. (a) A could perform signals in both tracks with the same behavior. (b) A could perform a signal in track 2 at the same time as the signal in track 1, but in a different medium – e.g., gesturing as against speaking. (c) B could signal in track 2 at the same time as A is signaling in track 1 – in the same or different medium. Or (d) A could perform signals in track 2 in the interstices of signals in track 1.

3. *Brevity*. Because most collateral signals carry so little information, they should be brief and limited in variety.

4. *Differentiation*. Signals in track 2 need to be distinguishable from those in track 1. They may well be created from a specialized, identifiable set of methods.

Among the signaling methods we saw in Chapter 6, some readily satisfy these four requirements, and they are often exploited in collateral signals. Here are some of the methods used for addressing meaning and understanding.

1. *Temporal placement*. Speakers can indicate they do or don't understand what was said by the placement of their utterance. Here are excerpts from previous examples:⁷

Track 2 signal	Example	Interpretation
Acknowledgment	A: it was a lovely day B: yes	"I understand what you have just now finished"
Uncertainty marker	A: Okay, the next one is the rabbit. B: u::h	"I don't yet understand what you have just now finished"
Collaborative completion	A: So I'd wanna- when I make a tape, B: be able tuh speed it up.	"Do you mean this: 'be able to speed it up'?"
Truncation	A: Where's the other - B: On the back shelf.	"I already understand your question so I am answering now."

In each case, B signals what he or she understands by the timing of the utterance. Acknowledgments are timed to overlap or abut the end of the phrase or clause they acknowledge. And although "yes" and "u::h" in the first two examples are signals in track 2, the words in the last two examples are not. For these, the collateral signaling is achieved entirely by their placement.

2. *Marked prosody*. Every utterance in track 1 has an expected prosody. One way to create a collateral signal is to superimpose an unexpected, or *marked*, prosody on that utterance. Here are extracts from previous examples:

⁷ The uncertainty marker is from Clark and Wilkes-Gibbs (1986).

Track 2 signal	Example	Interpretation
Trial constituent	A: a man called Annegra? -	"Confirm that you know who I mean by Annegra."
	B: yeah, Allegra	
Installment	A: so Mr. D. Challam ,	"Confirm that you understand this installment."
	B: yes	
Fade-outs	A: you know, she's just gonna - -	"I am sure you understand without my completing this."
	B: yeah	

Speakers mark trial constituents with a rising intonation and pause. They mark installments with a so-called list intonation and pause. They mark fade-outs with a drop in speed and volume. Remove these markings and you remove the collateral signals.

3. *Gestures*. Gestures are often ideal as collateral signals. They are easily distinguished from speech and can be performed simultaneously, briefly, in the background of that speech. Head nods, for example, are regularly used as acknowledgments. Respondents also display construals with motor mimicry, as when Nina grimaces as Roger describes a bad car accident (Chapter 6).

Other gestures have been identified as collateral signals by Janet Bavelas and her colleagues (Bavelas et al., 1992). Iconic and indicative gestures, they argue, divide into what they called *topic* and *interactive gestures*:

Topic gestures depict semantic information directly related to the topic of discourse, and interactive gestures (a smaller group) refer instead to some aspect of the process of conversing with another person. (p. 473)

So topic gestures are in track 1, because they deal with official business, and interactive gestures are in the collateral track, because they serve a meta-communicative function. Among the interactive functions Bavelas and her colleagues noted is "seeking agreement, understanding, or help." (p. 473) Example: One person has just talked about looking up information in a library card catalogue, and a second person says:

then look up under the *appropriate* thing

On the word *appropriate* the speaker makes a quick hand movement toward the first person – an indicative gesture – meaning “you know, what you just said about looking up the author or title.” Bavelas et al.’s narratives had many such gestures.

So collateral signals have identifiable forms – they are genuine signals. It is just that they are backgrounded to the primary signals: They are either simultaneous with or in the interstices of primary utterances. As a result, they are often realized with temporal placement, marked prosody, or gestures.

PROJECTING EVIDENCE

To complete a contribution, contributors need evidence that their respondents have understood what they meant, and the respondents try to provide that evidence. The *raison d'être* of track 2 is to deal with such evidence. Indeed, in the presentation and acceptance phases, the two partners are trying to complete this minimal joint project in track 2:

Proposal. I request you now to provide evidence of understanding of type x.

Uptake. I hereby provide evidence of understanding of type x (or stronger).

For such evidence to be of value, it must be valid, economical, and timely, and the two partners should exploit their collateral joint projects to make sure it is. That suggests the following principle:

Principle of projected evidence. With every presentation, contributors use signals in track 2 to project the type of evidence of understanding that they consider to be valid, economical, and timely enough for current purposes.

We have already seen evidence for this principle. When speakers decide how to present an utterance, they are simultaneously projecting the type of evidence they want. Here are extracts from previous examples:

Type of presentation	A's presentation	Evidence projected from B
Complete proposal	and what are you then	uptake of proposal
Continuing presentation	it was uh it was a lovely day	backgrounded acknowledgment
Installment	and through the gate, -	explicit confirmation
Verbatim installment	forty-nine Skipton Place	verbatim repetition
Constituent query	Annegra?	explicit confirmation
Backgrounded acknowledgment	uh huh	continued attention

When Alan asks “and what are you then,” he is projecting Burton’s uptake, which will display that understanding. Each type of presentation projects a different uptake in track 2 – from continued attention to verbatim displays. Indeed, in the examples cited here, the respondents’ uptake is as expected.

Economy. In choosing a type of presentation, contributors project the most economical evidence they think they need for current purposes. One part of this cost is processing time (Chapter 3): The participants try to minimize total joint processing time. Other things being equal, the briefer the evidence, the better. Contributors won’t request elaborate evidence unless they need it, nor will their respondents be more elaborate than they think is needed. Here is the principle of opportunistic closure at work.

The most economical evidence is uptake or backgrounded acknowledgments. Uptakes, like answers to questions, take no time out from the progress of the conversation. They carry it on without a break. Backgrounded acknowledgments also take no time out. They are produced in track 2 without respondents taking extra turns or, because they overlap, additional time. These are precisely the forms of evidence projected in concluded and continuing contributions. That is one reason why they are so common.

Other evidence costs more. Contributors need a special reason to make a constituent query, requesting a nod or “uh huh”; for example, their need to check on a reference must be urgent. They also need a special reason to invite explicit “uh huh”s with more than one installment

per utterance; it must be important to check on their respondents' understanding of each installment. They also need a special reason to invite a completion; the need for a name, word, or phrase to finish off their contribution must be great. In contrast, in using "uh huh," contributors project nothing more than continued attention. It would be odd to acknowledge "uh huh" with another "uh huh," or "I see," or "okay." The participants estimate how long it should take to reach joint closure and make choices to minimize that time.

Timeliness. Contributors also project *when* respondents are to give evidence. The usual point is the slot immediately after the presentation. Full turns are to be accepted with the initiation of the next turn; installments are to be accepted immediately in the following pause; trial constituents are to be accepted immediately after the constituent; and so on. There is good reason for this regularity. Speakers try to design presentations to provide all the material that is needed for complete understanding. So almost all presentations are full constituents – full sentences, clauses, or smaller phrases – and not fragments. Roger cannot present "do you and" and expect Nina to understand. She needs to know how he will finish. Full constituents are natural units of meaning and understanding.

But respondents should provide evidence in the projected slot as soon as reasonably possible. The reasoning is this. For two people to accumulate common ground in an orderly way, they must complete the current contribution before going to the next (Chapter 2). Most contributions depend on the previous ones for their success, so they are likely to go wrong unless the previous ones are complete. And to minimize joint processing time, respondents should give evidence of understanding as early in the projected slot as they can. The lack of timely evidence can be construed as a lack of attention, identification, or understanding. When I call out "Helen?" and Helen doesn't respond immediately, I may take that as evidence she didn't hear me. When A tells B "Okay, the next one is the rabbit," and B begins "u::h," A takes that as evidence that B cannot identify "the rabbit" so A adds "that's asleep, you know, it looks like it's got ears and a head pointing down?" to which B says "okay" (Clark and Wilkes-Gibbs, 1986). We use the promptness of a response as part of its evidence of understanding.

In special circumstances, evidence of understanding is also provided within presentations. When Justin went on and on with his description of a girl named Polly, he was inviting Ken to interrupt when he under-

stood. When Eve cut off Herb's question "Where's the other -" with her uptake "On the back shelf," she used the placement of her utterance to signal she already understood. Josh used a similar signal when he completed Marty's nonconstituent utterance, "So I'd wanna- when I make a tape," with "be able to speed it up."

Conclusions

In conversation, speakers don't just speak, and listeners listen. They demand closure on their actions – even their joint actions. According to the grounding hypothesis, people work hard to ground their joint actions – to establish them as part of their common ground. If so, contributing to a conversation should take the efforts of both contributors and their respondents, and it does. Contributors present signals to respondents, and then contributors and respondents work together to reach the mutual belief that the signals have been understood well enough for current purposes.

In this picture, contributions can emerge in many forms. Two forms predominate. In concluded contributions, respondents presuppose they understand a presentation by proceeding to the next relevant contribution. When asked a question, they take it up, their answer displaying their construal of the question. In continuing contributions, respondents assert they understand with an acknowledgment like "uh huh" or "yeah" or a nod. Other forms of contributions depend on how contributors design their presentations (in installments, with rising intonation, with fade-outs) and how respondents respond to them (with queries, evidence of misunderstanding, collaborative completions). There is no end to the variety of forms of emergent contributions.

People in conversation are therefore engaged in two tracks of actions at once. They talk about official business in track 1 and about their communicative acts in track 2. It is in track 2 that contributors ask for confirmation or invite completions, and respondents provide acknowledgments and other evidence of understanding.