

Embodied Hearers and Speakers Constructing Talk and Action in Interaction

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Formal linguistics places an idealized speaker-hearer at the center of human language (Chomsky 1965; Saussure 1966). Hearers, who are largely though not completely silent, are however, given very little attention. Most analysis of language, including the study of talk-in-interaction, focuses almost exclusively on phenomena embedded within the stream of speech including linguistic structure, turn-constructional units, and prosody. However, within face-to-face interaction hearers use the visible organization of their bodies to display consequential participation in the talk of the moment. Speakers change the structure of emerging utterances in response to what they see their hearers doing. Hearers are thus central to the constitution of utterances, sentences, and the states of talk within which these structures emerge. Building an utterance is not only a multi-party activity, but also one constructed through the mutual elaboration of structurally different kinds of semiotic phenomena, including both the talk of the speaker, and the embodied displays of the hearer(s). How participants attend to the observability and display of each other's bodies in copresence as consequential for the collaborative organization of action is one of the central issues posed in the analysis of the relationship between interaction, language, and cognition. Such phenomena will be investigated here through analysis of a video-recording of a little girl trying to read a recipe as she makes cookies with her aunt. Within this sequence human action and cognition are organized through the ongoing construction and transformation of unfolding environments within which language structure, the sequential organization of talk-in-interaction, the participants' bodies, and features of the material surround mutually elaborate each other to create meaningful configurations of action and meaning that go beyond any of their component parts.

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1. Hearers as Embodied Actors

Much research on human language and cognition, has been lodged within a particular geography of cognition, one that takes the mental life of the individual speaker or actor as the primary focus of analysis. While linguistics recognizes that the speaker-hearer relationship sits at the center of language practice, the hearer is frequently conceptualized as a "passive" (Saussure 1966: 13)

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entity that merely decodes the signs produced by the speaker. Analysis thus focuses almost exclusively on the speaker. Though hearers are largely (though not completely) silent, they use their bodies to produce a range of displays that are most consequential to the ongoing organization of talk. Speaker's adaptation to what the hearer can be seen to do leads to changes in the emerging structure of the speaker's utterances and sentences (C. Goodwin, 1981; M.H. Goodwin, 1980). Constructing an utterance is

thus not only a multi-party activity, but also one constructed through the mutual elaboration of structurally different kinds of semiotic phenomena, including both the talk of the speaker, and the embodied displays of the hearer(s). Recent research in both cognitive science (Clark, 1997; Gibbs, 2005; Lakoff and Johnson, 1980; Lakoff and Johnson, 1999; Núñez, 2004) and neurology (Damasio, 1999) has drawn particular attention to the part played by the body in both cognition and human language. A focus on embodiment in the study of cognition would seem to provide analytic resources for systematically investigating the reflexive mutual orientation of speakers and hearers. However, in both cognitive science and linguistics analysis remains focused on the embodied experience of a single actor. The first sentence in Gibb's *Embodiment and Cognitive Science* (2005: 1) states that "Embodiment in the field of cognitive science refers to understanding the role of **an agent's own body** in its everyday situated cognition" (*emphasis added*). Within such a framework the active work of hearers remains invisible. By way of contrast the present paper will focus on how participants mutually read the displays produced by each other's bodies to construct talk that carries out courses of consequential, situated action.

This work uses as its point of departure a significant tradition that has focused analysis on how hearers participate in the construction of utterances. C. Goodwin (1981) demonstrated how speakers took into account the orientation of their hearers in a variety of different ways including abandoning utterances in mid-course when it was discovered that they lacked the gaze of a hearer, using restarts to request such gaze, modifying the emerging structure of utterances so that the sentence in progress remained appropriate to its addressee of the moment, and adding new segments to emerging sentences in order to coordinate the production of talk with the relevant actions of hearers. M.H. Goodwin (1980) investigated how visual assessments by hearers led to

speaker's changing a description in progress even as it was being spoken. C. Goodwin (1984) argued that rather than being something contained exclusively within the talk of a teller, a story in conversation was organized as a multi-party interactive field, in which different kinds of hearers organize their bodies in alternative ways in order to accomplish the actions in progress. The bodies of particular kinds of hearers, such as the principal character in the story, who is present at its telling, can be seen to display an ongoing analysis of the emerging structure of the talk in progress. Heath (1984, 1986) developed important analysis of the body of the hearer in both vernacular and medical settings. Recent analysis has focused on both the interactive organization of gesture and the calibration of embodied knowledge in scientific apprenticeship (Goodwin, 2007a; Heath and Hindmarsh, 2000; Heath and Luff, 2000; Hindmarsh and Heath, in press; Streeck, 2009). In addition to talk and the body the analysis that follows will also pay some attention to objects being used by the participants (this will be developed more fully in a more extended analysis to be published elsewhere). The point of departure for study of how participants use objects in interaction to accomplish cognitive tasks is both the exemplary work of Hutchins (1995), and earlier work of my own focused on interaction in scientific and workplace environments (for example Goodwin, 1995, 1996, 1997, 2000, 2003a, 2003b, 2007b).

2. Talk in Interaction

In this paper talk is transcribed using a slightly modified version of the system developed by Gail Jefferson (Sacks, et al., 1974: 731–733). Talk receiving some form of emphasis (e.g., talk that would be underlined in a typewritten transcript using the Jefferson system) is marked with ***bold italics***. Punctuation is used to transcribe intonation: A period indicates falling pitch, a question mark rising pitch, and a comma a continuing contour, as would be found for example after a

20 Candy: You gotta **read** it.
 21 (1.8)
 22 Candy: What's **it** say.
 23 Tammy: °(Recipe)
 24 (3.5)
 25 Tammy: **One en a h:a::lf?**
 26 (1.2)
 27 Tammy: One en a ha(h)(h)lf?
 28 (2.2)
 29 Candy: No. No.=It says-
 30 **Read it.**
 31 (0.3)
 32 Candy: **One cup,**
 33 (0.5)

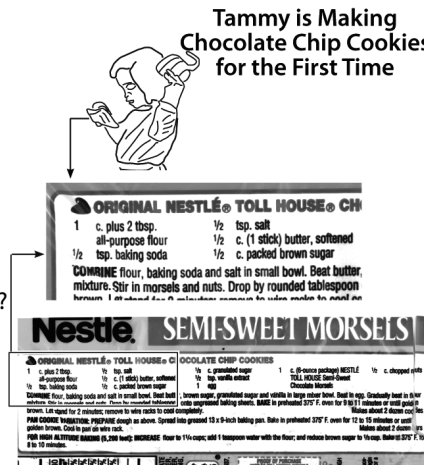


Figure 1 Talk in its Sequential Environment

non-terminal item in a list. A colon indicates lengthening of the current sound. A dash marks the sudden cut-off of the current sound (in English it is frequently realized as a glottal stop). Comments (e.g., descriptions of relevant nonvocal behavior) are printed in italics within double parentheses. Numbers within single parentheses mark silences in seconds and tenths of a second. A degree sign (°) indicates that the talk that follows is being spoken with low volume. Left brackets connecting talk by different speakers mark the point where overlap begins.

Seven-year-old Tammy is baking chocolate chip cookies for the first time. She is using the recipe printed on a bag of Nestlé's chocolate chips that was bought at the supermarket, and working with her aunt Candy. Figure 1 provides a transcription of some of their talk.

Consider line 25 in Figure 1, “One en a h:a::lf?”, in isolation from the talk surrounding it. Two issues immediately arise. First, while most grammars of English take the sentence to be the basic unit for the organization of language, line 25 is but a sentence fragment, an isolated noun phrase, and indeed, with its missing noun, not even a complete noun phrase. Second, what action is being done with this talk? Why is

Tammy saying these words right at this moment?

When this utterance is embedded within the larger sequence of talk it emerges from, it is immediately clear that what Tammy says at line 25 is an answer to Candy’s question in line 22 “What’s it say.” Rather than being incomprehensible as a sentence fragment, an isolated noun phrase, Tammy’s talk is a next action to Candy’s and is to be understood, by both the participants and analysts, in light of its sequential position, as a strip of talk to be tied in a relevant fashion to what the prior speaker has just said. Specifically “One en a h:a::lf?” is Tammy’s report of what the recipe indexically invoked by the “it” in line 22 says.

If one wanted to pack everything relevant to the production of this utterance back into the mental operations of a single actor, one might try and build models that treat line 25 as an elliptical utterance, in which what is actually said emerges from a larger mental landscape that includes language implicated in the organization of the utterance but not actually spoken. However, this hardly seems necessary. Instead, Tammy’s talk is visibly part of a multi-utterance sequence in which separate actors contribute different parts of the linguistic structure necessary for its com-

prehension. Its production and the forms of organized practice required for its understanding are intrinsically social.

More generally, lines 22 and 25 are an example of what Schegloff and Sacks (1973: 295–295) describe as an adjacency pair. Adjacency pairs consist of sequences of paired utterances such as greetings, closings, questions followed their answers, offers followed by an acceptance or refusal, etc. They occur massively in talk-in-interaction and are characterized by the following features (Schegloff & Sacks, 1973: 295–296) “(1) two utterance length, (2) adjacent positioning of component utterances, (3) different speakers producing each utterance . . . (4) relative ordering of parts (i.e., first pair parts precede second pair parts) and (5) discriminative relations (i.e., the pair type of which a first pair part is a member is relevant to the selection among second pair parts).” In that adjacency pairs require for their accomplishment the systematic collaborative work of separate individuals, they (and the sequential organization of talk more generally) constitute pervasive forms of elementary human social organization that join the details of language use to endogenous social practice. Moreover, such organization provides an answer to the question of why Tammy performs the particular action that she does at just this moment. Candy’s request creates a context in which a particular kind of next action from Tammy, an answer to the request, is visibly expected. Indeed the conditional relevance (Schegloff 1968) created by a first pair part, such as Candy’s request, is so strong that participants not only treat what is said next as a reply to that action, but can also see failure to say anything, something that doesn’t happen, as a significant event in their interaction (consider a student’s silence after a teacher’s question).

In brief, the sequential analysis of talk-in-interaction provides powerful analytic resources that link the details of language use to the ongoing organization of human social life. In the

data being examined here 1) language structure is organized within multi-utterance, multiparty exchanges; 2) the linked request and answer provide an example of joint, collaborative social action built through two separate individuals’ use of language practices that construct a larger whole through the way which each is organized with reference to the other. 3) Not only the action that Tammy is performing, but also the phenomena that are the focus of her current attention and cognitive work, her intense scrutiny of the package which displays her visible efforts to try and understand in some fashion the written recipe so that she can report what it says (see line 25), are embedded within her efforts to build the next action expected of her at this particular moment. The sequence thus links linguistic, social and psychological phenomena, a mind actively working to try and understand something, into a coherent whole.

3. The Bodies of the Participants

There are, however, crucial features of what happens in the exchange between Candy and Tammy that remain invisible if analysis focuses only on their talk. To begin to investigate how the bodies of the participants are consequential for the organization of the talk and activities they are pursuing together, we will examine what happens during the long silences in this sequence.

3.1 Precisely Coordinating Bodies and Emerging Talk

Tammy’s “One en a h:a::lf?” in line 25 is spoken with rising intonation (indicated in the transcript by a question mark). By inflecting her talk in this way Tammy produces not only an answer to Candy’s request in 22, but also a new first pair part that makes a reply from Candy relevant. Tammy’s rising intonation seems to display weakened epistemic certainty about what she is saying (note also the extensive lengthening of sounds in “h:a::lf?” indicated in the transcript by colons), and to construct a request for con-

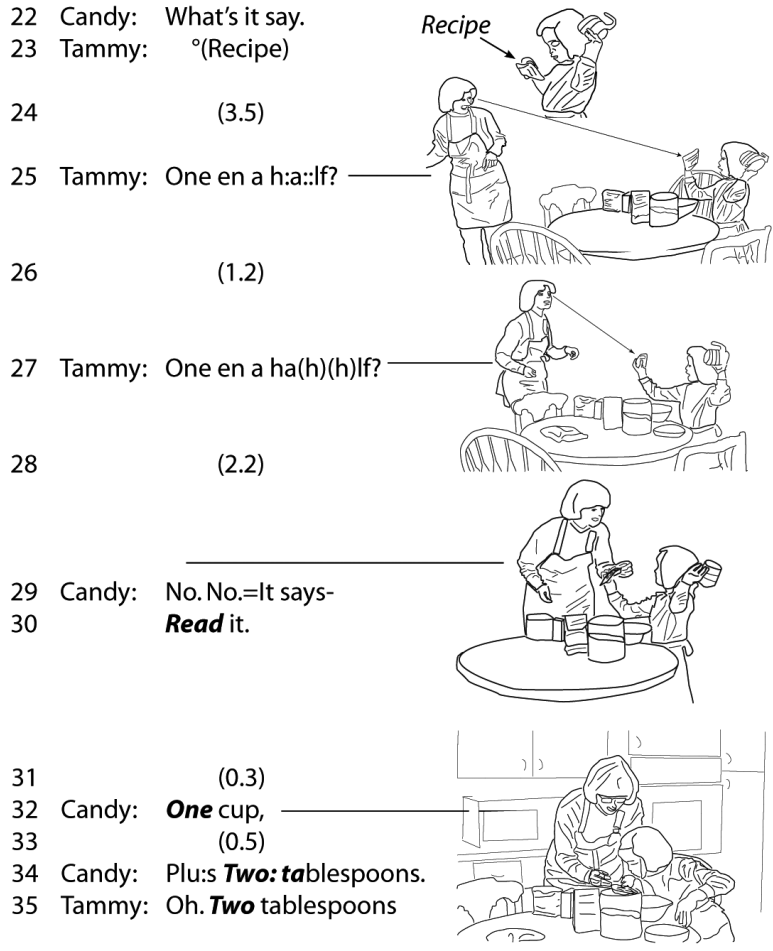


Figure 2 Positioning Bodies

firmation (Goodwin 1981; Goodwin 1987) of its correctness. This is followed by a long 1.2-second silence, broken only when Tammy in line 27 repeats her answer. Another very long 2.2 second silence follows before Candy, with her “No.No.= It says-“ in line 29 finally treats what Tammy has said as incorrect. Conversation analysts argue that there is a preference for agreement in conversation (Pomerantz 1984; Sacks 1987 [1973]), and that evidence for this can be found in the long silences (see lines 26 and 28) that frequently precede dispreferred responses, such as Candy’s disagreement in line 29.

However, when a visual record of the conversation is examined these silences are seen to be

the product of a quite different set of practices implicated in the forms of embodied organization required for Candy to produce an answer to Tammy’s request. As can be seen in Figure 2 when Tammy makes her request at line 25 she places the recipe directly in Candy’s line of sight. However the recipe is written in small type on a small package and Candy is clearly not close enough to read it. By beginning to walk toward Tammy, Candy demonstrates she is treating the combination of talk (the reading marked as tentative by rising intonation) and embodied action (holding the package for her to see) that Tammy is producing as a request for Candy to read the package herself. The practices required

for Candy to produce her eventual answer in line 29 extend far beyond the stream of speech, requiring among other things that she reposition her body in order to gain appropriate epistemic access (Goodwin 2007b) to the writing she is being asked to compare with Tammy's tentative report. The silences in lines in 26 and 28 cannot in any way be argued to provide evidence for incipient, dispreferred disagreement, since Candy is not in a position to either agree or disagree with Tammy's gloss of the recipe until she is positioned to read it herself, and this occurs only at the very end of the silence in line 28.

Line 27 ("One en a ha(h)(h)lf?") sheds further light on how the bodies of the participants are implicated in the organization of their action and talk. Line 27 is a repetition of what was said in line 25. It is thus clearly not moving the talk in progress forward, but instead holding action in place. What work is being done by such a move? Candy has to move some distance from where she was at line 25 before she will be positioned to perform the action requested by Tammy there (reading the recipe). There is thus a considerable delay between the point at which the request becomes visible in line 25 and the place where an answer to that request can finally be produced at line 29 (8.8 seconds). By redoing the request in the midst of Candy's movement, Tammy displays that both participants are continuing to organize their actions within the frame of relevance created by the request, despite the fact that a significant period of time passes without an answer to it. Line 25 is redone in a slightly different way at line 27, not because something new has to be said, but instead to lengthen the time during which Tammy is making her request, so that the scope of its visibility as the current action in progress can be coordinated with the body movements of a coparticipant that are required for the accomplishment of the projected next action.

The mutual accommodation of emerging language structure and embodied behavior impli-

cated in the organization of the actions being done through the talk in progress is a pervasive phenomenon in face-to-face conversation. Elsewhere I describe how speakers add new segments to units of talk on many different levels in order to coordinate emerging language structure with relevant embodied actions. Thus speakers can lengthen a phoneme so that gaze reaches a new addressee at a precise moment (Goodwin 1979: 107-108; Goodwin 1981): 127-130). A noun phrase can be recycled with the addition of an adjective to it so that it can be redone when an addressee's gaze returns to the speaker (Goodwin, 1981: 130-131). New segments can be added to the ends and middles of emerging utterances so that precise coordination between the structure of talk and relevant embodied actions of participants' bodies can be accomplished (Goodwin, 1981: 127-142). Sentences can be significantly changed, even as they are being spoken, in order to maintain the appropriateness of the talk to its addressee of the moment. Emerging nonvocal actions can be modified in a similar fashion (Goodwin, 1981: 144-147). Tammy's adjustment of her talk in order to coordinate it with relevant embodied actions of her coparticipant is but one example of a far more general phenomenon, specifically how talk and embodied action mutually structure each other in order to accomplish relevant action within human interaction.

3.2 Embodied Mutual Orientation

The bodies of the participants are used to organize talk and action in a quite different way in the 3.5-second silence that occurs in line 24, between Candy's initial request in line 22 and Tammy's tentative reply in line 25. Here Tammy and Candy use their bodies to create a participation framework that makes visible mutual orientation toward both each other and relevant objects. The establishment of such a frame is absolutely central to the organization of the actions that follow.

19 Tammy: Okay. how many do I have to **put**.

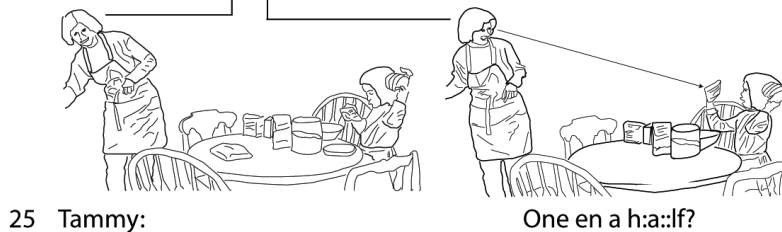
20 Candy: You gotta **read** it.

21 (1.8)

22 Candy: What's it say.

23 Tammy: °(Recipe)

24 (3.0) (0.5)



25 Tammy:

One en a h:a::lf?

Figure 3 Mutual Orientation

As we saw above Tammy's "One en a h:a::lf?" encompasses a request that her addressee check the tentative gloss offered here by reading the recipe herself. However, it cannot be recognized as such an action from the talk alone. To see what she is being asked to do the addressee must be able to see how Tammy has turned the package around, so that she can't see the recipe herself, and is holding it up precisely in Candy's line of sight (see the pictures in Figure 2 above and Figure 3 below).

However during most of the 3.5-second silence in line 24 neither Candy nor Tammy is gazing toward each other. As can be seen in the top image in Figure 3 Candy has her back to Tammy as she searches for utensils in a kitchen drawer, and indeed she speaks line 22 without looking back toward Tammy. At the same time Tammy is staring intently at the bag of chocolate chips with its recipe. Each party is pursuing her own individual action.

Approximately 3 seconds into the silence after line 22 Candy starts to move her head and upper torso back toward Tammy (see the bottom left picture in Figure 3). As soon as Candy's gaze reaches Tammy she starts to move her own

gaze toward Candy, while simultaneously lifting the package toward Candy and turning it over so that the recipe faces Candy (bottom right picture in Figure 3).

Tammy's request at line 25 thus emerges within an environment where her addressee is already looking at her. This does not appear to be accidental. First, as noted above, addressee gaze is crucial to the organization of the specific way in which Tammy builds action here; line 25 would not construct the action it does without the gaze of its addressee. Second, Tammy begins her action immediately after Candy moves her gaze to her after a long period in which Candy was gazing elsewhere. In essence, the participants actively position their bodies to create a framework of visible mutual orientation that makes possible the actions that subsequently occur within it.

Analysts, including myself, have frequently described what Tammy is attending to here as a shift in a co-participant's gaze. However, in a number of ways such a description is seriously inadequate. As is demonstrated by, for example, Tammy holding up the recipe (or more generally hearers gazing at speakers), Candy's gaze is being treated as something that is lodged within an

actor who possesses a range of competencies, and it is the way in which gaze indexes a particular deployment of these capacities (for example the ability to bring them to bear upon the object being gazed at), rather than the fact that Candy's eyes happen to be pointed in a particular direction, that Tammy is treating as relevant to the organization of her subsequent action. By holding the package in just the way that she does Tammy is proposing that Candy focus her attention on it (rather than other equally available phenomena in the scene such as Tammy's own face, or the measuring cup she is also holding), and expecting her to perform a range of relevant operations on what is being looked at, such as reading the recipe. Gaze is not being attended to as an isolated phenomenon in its own right, but instead as something that indexes the availability, through relevant positioning, of an actor with complex abilities that are relevant to the organization of the actions currently in progress.

Stated in other terms, Candy's gaze is being treated as a Peircean sign (Hoffmeyer 1996; Peirce 1961): "something [Candy's gaze] which stands for something [her capacities, ability to recognize and attend to specific relevant phenomena, to participate in subsequent interaction in specific ways, etc.] to somebody [Tammy, an agent using that gaze and what it stands for as the infrastructure upon which a subsequent action can be built] in some respect or capacity [in just the ways that are relevant to the organization of the actions currently in progress, for example as displaying that Candy is now positioned to participate appropriately in particular forms of subsequent interaction, to possibly read the recipe, etc.]." The organization of Tammy's action following the arrival of Candy's gaze at line 25, with its conjuncture of a gloss of the recipe combined with holding the recipe itself up in front of Candy's eyes, displays just such an analysis by using Candy's gaze to invoke consequential action (a request to read what is being held up, to check the tentative gloss, etc.) that

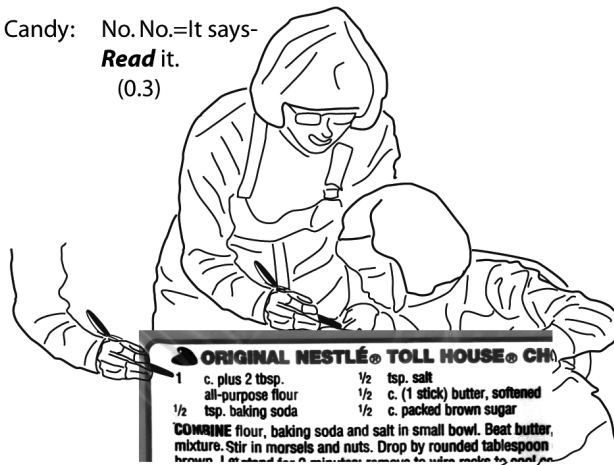
builds in precise detail upon the positioning of that gaze, but simultaneously goes well beyond it by invoking specific capacities of Candy as an actor that her gaze indexically stands for.

In other words, Tammy treats Candy's body not as a simple object, but instead as the locus for a range of relevant signs indexically tied to her positioning and capacities as an actor able to pursue particular courses of action within the current interaction. These signs include the gaze shift and the new availability for relevant perceptual and cognitive operations displayed by this change in posture, and more generally the way in which Candy's body shows that it is positioned to participate with Tammy in particular kinds of new activities, for example to attend to phenomena that Tammy might indicate. Tammy's next action construes the signs displayed by Candy's body in a specific way by using them as the point of departure for a new action tied, not just to Candy in the abstract or simply as another actor, but specifically to aspects of the sign complex displayed by her body that were just noted (most clearly by placing the text to be read in front of the eyes that have just moved to a position where this can be done).

In turn the particulars of Tammy's new sign complex provide the framework for Candy's action in response to it, as demonstrated by the way in which Candy begins to move her body toward the recipe. Immediately after this, with her repeat in line 27, Tammy builds specifically on that movement as a display of her continuing involvement in the project of reading the recipe. This chain, in which each subsequent action is built with orientation toward the structure and resources provided by the action it is responding to (in other words each next action constitutes an interpretant of that prior sign complex), while simultaneously constituting the point of departure for the action that will follow it, can of course continue indefinitely.

The actions that occur in this sequence are built through the progressive transformation of

29 Candy: No.No.=It says-
30 **Read it.**
31 (0.3)



32 Candy: **One cup,**
33 (0.5)
34 Plus: **Two: tablespoons.**

Figure 4 Reading the Recipe

locally organized environments. These environments encompass a range of quite different kinds of phenomena, instantiated in different modalities, including talk, the body, and relevant objects, such as the printed recipe.

Examination of the phenomena so far investigated has focused on the sequential organization of successive actions by different participants. Sequential organization is a main focus of research in conversation analysis, though the way in which phenomena beyond the stream of speech are relevant to such processes is not well developed, or given distinct analytic importance, within conversation analysis itself (Drew 2005: 78; Schegloff 2007: 11). However, in addition to displaying analysis of prior events in subsequent turns, participants also build in action in concert with each other simultaneously through the concurrent use of diverse semiotic resources by multiple participants occupying different structural positions within a single action (Goodwin and Goodwin 1987). Indeed the mutual orientation of speaker and hearer within the turn-at-talk is one example. We will now investigate the simultaneous organization of action in Candy's answer to Tammy's request.

4. Environmentally Coupled Gestures

In lines 32-34 Candy shows Tammy how to read the recipe. As can be seen in Figure 4 this action is built through the simultaneous, integrated use of a range of quite different kinds of sign processes in diverse media. First, the gaze and embodied postures of both participants display mutual orientation toward the same object, the recipe. This triadic, joint attentional frame (two actors displaying orientation toward the same object while recognizing that each other is attending to that object) is argued by many (Tomasello 1999) to be absolutely central to distinctively human forms of cognition (I myself consider states in which participants are attending to each other, as in the mutual orientation of speaker and hearer within the turn-at-talk, equally important). From the perspective of the study of human interaction the participation frameworks (Goodwin 2000; Kendon 1990) created by the participants' bodies here, and throughout this sequence, organize the "environment of mutual monitoring possibilities" that Goffman (1972: 63) argues is constitutive of the

social situation.

Second, talk is used to demonstrate to Tammy how to read the text contained in the recipe. Note the way in which the participation framework created by the shared orientation of the participants' bodies indexically grounds the talk that occurs here. Thus neither the "It's" in lines 29 and 30, nor the isolated noun phrases in lines 32 and 34 are treated as in any way problematic. The organization of the talk is thus intertwined with the participation framework within which it emerges.

Third, Candy is using a spoon she is holding in her right hand to perform a pointing gesture right where Tammy is looking. Like the participation framework this gesture is done with the body. However it is a very different kind of meaning-making practice. Whereas the participation framework was about the mutual orientation of the participants, and creates the framework within which activities such as pointing can occur, the pointing itself does not reference the actors, but instead is tied to the content of what is being talked about, while indicating the specific phenomena in the environment that they are drawing each other's attention to. Candy is using the spoon to highlight specific phenomena within a complex visual environment. The body is thus being used to create different kinds of signs simultaneously, all of them crucial, but in quite different ways, to the organization of the action in progress. Pointing such as this has, with its triadic organization of joint attention, been argued to be rare in other animals and central to human cognition (Tomasello 2006) since it requires the ability to recognize communicative intentions (Sperber and Wilson 1986).

Fourth, it would not be possible for Tammy to adequately understand what Candy was saying to her by attending only to her talk and embodied behavior. Candy's gesture points to specific phenomena in the material environment: the "1 c. plus 2 tbsp." written on the chocolate chip package that contains the recipe. To understand

Candy's action Tammy must attend simultaneously to her talk, the pointing gesture that occurs while she is talking, and the distinctive structure of what is being pointed at in the material environment that is the focus of their joint attention.

Most study of gesture draws an invisible analytic boundary at the skin of the actors and focuses analysis on the relationship between a gesturing body and the talk occurs with it. However, the action that occurs here cannot be grasped within such a framework, or by attending to a single semiotic field in isolation. By themselves the talk, the gesture, and the structure in the environment that is the focus of the participants' attention are incomplete. Candy's action is built by juxtaposing these diverse meaning-making resources so that they can mutually elaborate each other to create a whole that is not only greater than, but quite different from, any of the parts from which it is constructed (note for example Tammy's inability to find what the recipe said from the text alone). Actions such as this, which encompass language, gesture and relevant structure in the material environment, are elsewhere investigated as environmentally coupled gestures (Goodwin, 2007). The diverse fields implicated in the organization of the action of the moment construct contextual configurations (Goodwin, 2000), capable of rapid, systematic transformation, that are central to the organization of the environments within which human action and cognition are situated.

5. Conclusion

Examination of this sequence has attempted to provide a demonstration of how human action and cognition are organized through the ongoing construction and transformation of unfolding environments within which language structure, the sequential organization of talk-in-interaction, the participants' bodies, and features of the material surround mutually elaborate each other to create meaningful configurations that go beyond

any of their component parts. One way to state this argument as clearly as possible is to compare it with another, quite common model, one in which a speaker transmits information to a hearer by saying something. Thus it might be argued that when Candy says “One cup (0.5) Plus Two: teaspoons” (lines 32-34) the action she is performing can be found through examination of her talk, and that with what she says Candy is providing Tammy with new information. However, such an account, though accurate in a very limited, indeed trivial, sense, is completely inadequate analytically for a variety of different reasons.

First, the action that Candy is performing for Tammy cannot be found in the talk alone. Candy is not simply reading something to Tammy, but showing her how to read a specific kind of text, a recipe with cryptic abbreviations. This demonstration can only be accomplished if Tammy attends simultaneously to two quite different kinds of semiotic fields that are being juxtaposed to each other: the line printed in the recipe and Candy’s talk as she reads that line. As Candy reads she uses the end of the spoon she is holding to point at the abbreviations she is expanding, and thus explicitly links the textual structure of the recipe to her unfolding talk. Her action thus encompasses not only talk but also embodied action and relevant structure in a quite different semiotic modality, the printed recipe.

Second, what makes it possible for Candy to systematically expect that Tammy will attend to all of these fields (the talk, the gesture, and the writing), as she must if Candy’s action is to be successful? A major resource for this is the visible positioning of Tammy’s body. Candy speaks while Tammy is looking at the recipe, and places her environmentally coupled gesture right in front of Tammy’s eyes. The arrangement of bodies relevant to the organization of this action extends beyond Tammy as an isolated actor, to include Candy. The coordinated positioning of both Tammy’s body and Candy’s creates a pub-

lic framework that establishes a visible focus of shared attention. Candy’s action is made possible by the way in which it emerges within an embodied participation framework that establishes shared orientation to specific phenomena that are visibly and publicly the focus of the attention and action of both participants.

Third, one way to generalize the organization found in the environmentally coupled gesture at lines 32-34, is to note that the participants are using their bodies, and relevant features of the setting, to build, dismantle and rebuild frameworks within which other actions become possible (for example the talk and pointing through which Candy demonstrates to Tammy how to read the recipe). This process, in which participants actively use the semiotic resources provided by their bodies (for example how posture can display to others what an actor is oriented toward, the visible focus of their attention, what they are about to do, their availability for particular kinds of collaborative action, etc.) and features of the setting to create environments within which other kinds of sign exchange processes can flourish (talk, pointing, reading a recipe, etc.) occurs massively in this sequence, and in human interaction in general.

The organization of action within these environments is also relevant to issues posed in the analysis of human phenomenology, cognition, psychology and culture. One classic anthropological perspective on culture focuses on how members of particular societies see phenomena in the worlds that are the focus of their scrutiny in unique ways that are quite different from how members of another society would categorize these same events. In the sequence being examined here we see not only how Tammy must recognize distinctive measurements, tools and textual structures, all lodged within the cultural life of specific societies, in order to successfully perform the work she is engaged in, but also how that ability is being shaped through systematic public practice. Central to this pro-

cess are frameworks for the organization of intersubjectivity that encompass language, the body, and phenomena being scrutinized. These frameworks, and the abilities of participants to understand each other in just the ways that make collaborative action possible, are being structured, articulated, negotiated and changed through unfolding courses of action within interaction.

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