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CHARLES GOODWIN

# Conversational Frameworks for the Accomplishment of Meaning in Aphasia

Overwhelmingly, research on aphasia focuses on what particular disorders can tell us about how the brain organizes language. However, the problems visible as aphasia have an equally important social life. They shape possibilities for communication and patterns of human interaction in profound and powerful ways. Moreover, when analysis moves beyond the abilities of the isolated individual, we find that the activities of interlocutors, and more generally the organization of talk-in-interaction, provide crucial frameworks that enable someone with severe aphasia nonetheless to construct meaningful action within states of talk. Rather than focusing exclusively on what is distinctive about aphasia, such analysis will also shed light on general practices used by participants in conversation to build action and meaning in concert with each other.[1]

In 1979 Chil, a successful New York lawyer, a man who made his living through his ability to use language, suffered a massive stroke in the left hemisphere of his brain. The right side of his body was paralyzed, and he suffered severe aphasia, losing almost completely the ability to speak meaningful language. He was, however, able to understand what others said to him, to gesture with his one remaining hand, and to use nonsense syllables to produce meaningful intonation melodies. On the advice of the nurse caring for him in the hospital, and against the advice of his neurosurgeons, who insisted that since nothing could be done to repair his brain he would spend the rest of his life in bed in a vegetative state, his family sent him to the Kessler rehabilitation center. After several months of intense work with therapists there, he learned to walk with a brace and to speak three words: *yes*, *no*, and *and*.[2] For years after the stroke, his wife would dream that he was again able to talk to her.

However, fifteen years later, in 1994 when the videotape that provides the data for this chapter was made, these were still the only three words he could speak.[3]

Of all the words in a language, why these three? Note that all three presuppose links to other talk. *And* ties other units of talk, such as clauses, to each other. *Yes* and *no* are prototypical examples of *second pair parts* (Sacks, 1992b; Sacks, Schegloff, & Jefferson, 1974; Schegloff & Sacks, 1973) used to build a response to something that someone else has said. This vocabulary set presupposes that its user is embedded within a community of other speakers. His talk does not stand alone as a self-contained entity, but emerges from, and is situated within, the talk of others, to which it is inextricably linked. This raises the possibility that despite the extraordinary sparseness of this system, its speaker might nonetheless be able to engage in complicated language games, to say a wide range of different things while performing diverse kinds of action, by using resources provided by the speech of others. In other work (Goodwin 1995a), I have described the organization of sequences in which his crucial moves take the form of *yes* and *no*. Each term can in fact be used to construct a range of different kinds of action through both variation in the way in which it is said, and through its sequential placement. However, because of the necessity of situating each of these words within a proper interpretative framework, he and his co-participants face intricate problems in working out precisely what is being said. What is *no* negating? An item within a set of choices offered by a co-participant or the whole line of action presupposed by an interlocutor's use of such a set in the first place? To work out such issues, Chil and his family use the same conversational structures for accomplishing meaning and action deployed by normal speakers (indeed, Chil has little trouble interacting with strangers as he wanders through the towns around him on an electric scooter doing errands, having frappicinos at Starbuck's, etc.). However, because of Chil's impairments, sequences of talk in which he is a participant are shaped in ways that both make visible his aphasia as a practical and moral issue (e.g., are interlocutors willing to take Chil seriously and perform the work necessary to figure out what he is saying, or will they comfortably ignore him?) and illuminate a range of organizational phenomena that have typically been so taken for granted that they have remained invisible to analysis.

This chapter will focus on Chil's use of gesture, a communicative modality that he uses as extensively as talk. Chil's gestures have none of the syntax, or other language properties, of a sign language. Indeed, like his vocabulary, they seem more sparse and restricted than the gestures of people without brain damage. Despite these very severe restrictions on possibilities for expression through language, he is nonetheless able to engage in complicated conversation. How is this possible? By embedding the semiotic field constituted through his waving hand within the talk and action of his interlocutors, Chil is able to both say something relevant and negotiate its meaning. His gestures do not stand alone, but instead count as meaningful action by functioning as components of a distributed process in which he creatively uses the language produced by others. More generally, these data perspicuously demon-

strate how the *transparency* of gesture, that is, the tacit ability of both participants and analysts to easily, indeed spontaneously, find relevant meaning in a speaker's waving hands, is very much a *social accomplishment*, something that participants do in concert with each other through the deployment of both the *sequential organization* of unfolding conversation, and the constitution of relevant *participation frameworks*. By using such resources, human beings are able to embed a moving hand within what Goffman (1964) described as "a single, albeit moving, focus of visual and cognitive attention." Within such a framework, and only within such a framework, gesture as a meaningful act becomes both possible and visible. Simultaneously, participants are provided with the resources they need to work out together what a gesture might relevantly mean, that is, how it might count as an appropriate move in the courses of action they are pursuing together. Such focus on socially organized frameworks for the accomplishment of meaning complements the psychological analysis of gesture found in much other research.[4]

## The sequence to be examined

Analysis in this chapter will focus on the use of gesture in a single extended sequence. Chil and his family are planning to go out for dinner. As shown in figure 4.1, Chil is seated in a chair, and his daughter Pat is discussing arrangements with him. Chil's wife, Helen, and Pat's daughter Julia are seated on the couch to Chil's left. The family agrees that all the five members present will eat dinner at six o'clock (lines 1–5 following). The exchange that will be the focus of this analysis then occurs. Chil participates in it by making a series of hand gestures with his left hand (his right hand and arm are paralyzed). In the following transcript, drawings of his handshapes are placed to the right of the talk where they were produced. A downward arrow indicates that Chil is ending his gesture and lowering his arm. To get some sense of the tasks posed for the family here, the reader is strongly encouraged to read through the transcript, while using the changing handshapes to try and figure out what Chil wants to say.

Example 1

| | | |
|---|---|---|
| 1 | Pat: | So we'll see if they have  a table for five. |
| 2 | Chil: | Ye(h)s. |
| 3 | Helen: | When? at six a clock? |
| 4 | Pat: | °mm hmm |
| 5 | Chil: | Yes. |
| | | • • • |
| 6 | Chil: | Da da:h. |
| 7 | Pat: | When we went with Mack and June. |
| 8 | | We- we sat at a table |
| 9 | | *ju*st as we came in the: fr-ont door. |

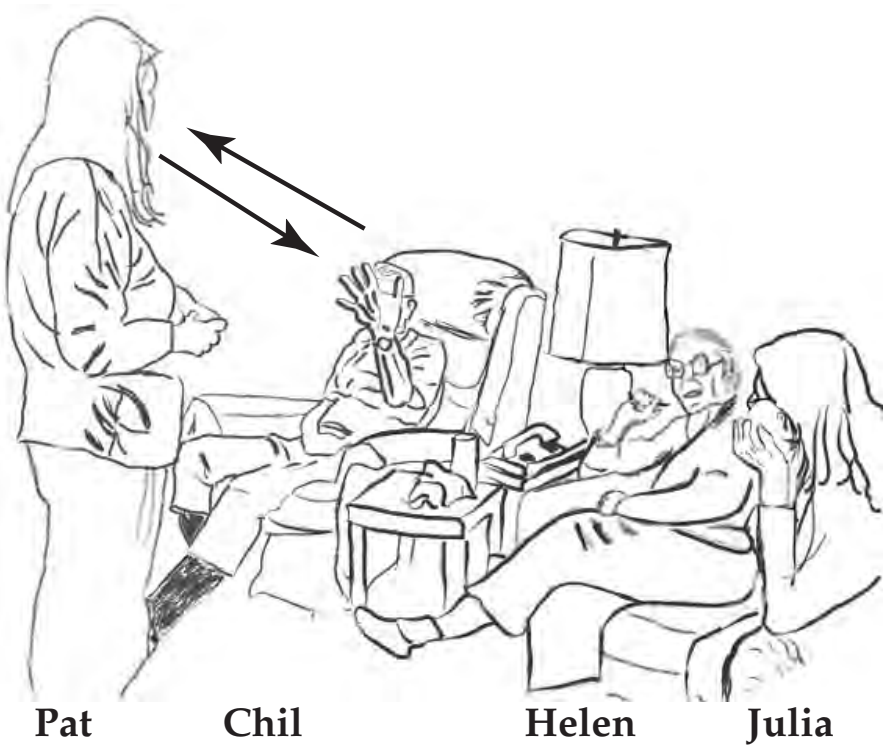



FIGURE 4.1. The participants

| | | | |
|---|---|---|---|
| 10 | | *hh We sat with them. (.) | |
| 11 | | ⌜There. ⌜En then we- | |
| 12 | Chil: | ⌞°mmm. ⌞*Ni*h *n*ih duh *du*h. Da *du*h. |  |
| 13 | Pat: | So *five* of us can fit there. | |
| 14 | | (0.2) |  |
| 15 | Pat: | *Six* a clock. | |
| 16 | | (1.0) |  |
| 17 | Pat: | *Five* people, |  |
| 18 | Helen | Sure. | |
| 19 | Pat: | ⌜Its:: |  |
| 20 | Julia: | ⌞Seven? | |
| 21 | Pat: | Seven? | |
| 22 | | a' clock? |  |
| 23 | | (0.2) | |
| 24 | Chil: | No(h). | |
| 25 | Pat: | *Six* a clock. | |
| 26 | | (0.2) | |

27 Pat: [*Se*ven?
28 Helen: [°Seven people. Who [('d they be)
29 Pat: [Five.
30 (1.0)
31 Helen: Seven people. [Who *are* they.
32 Pat: [That's six.
33 Julia: Two?
34 Pat: [Seven?
35 Chil: [Duh da *dah?* ((*Chil turns and points toward Helen*))
36 *Ye:s.*
37 (0.2)
38 Pat: Invite somebody?
39 Chil: *Ye:s.*
40 (0.2)
41 Pat: Mack en June?
42 Chil: Yes.
43 (0.2)
44 Pat: *Oh:.*
45 (2.0)
46 Pat: *Oh:.*

## Situating gestures within activity frames

With hindsight, it is possible to see that Chil wants to invite two additional guests, Mack and June, to dinner. However, it takes intricate, temporally unfolding work for his interlocutors to discover this. Through most of this sequence, Pat interprets any number higher than five as a proposal about the *time* for dinner (lines 15, 21–22, 25, 27), not the number of people who will be going.

Central to this sequence is a debate about the proper use and interpretation of very simple numbers. Numbers provide a prototypical example of universal, abstract, context-free knowledge categories. Moreover, such abstraction is frequently depicted as the clearest and most precise way of knowing something. It is argued that thinking, and the path to knowledge in general, moves from the messy details of particular concrete events to the clarity of context-free, abstract knowledge. In these data, however, the participants have no problems in recognizing that Chil's handshapes represent abstract numbers, such as five. However, establishing that lexical meaning in no way solves the problem of what those numbers mean, either as descriptions of relevant events, or pragmatically, as forms of action, such as a proposal that an invitation be made.

To give Chil's handshapes appropriate meaning, his listeners must embed them within a relevant descriptive frame. The organization of such frames has been an important topic in cognitive science. Indeed, the very activity being planned here, going to a restaurant, has been used as a prototypical example of how context might be coded in a script. These data point to serious problems with such an approach.[5] I

want to argue that, rather than being instantiated in autonomous cognitive structures, the crafting of meaning is intrinsically an interactive process, something that people do in collaboration with each other.[6] In line with suggestions by Schegloff (1972), these data support the argument that the really difficult, and crucial, issues in cognition involve not the problem of abstraction but just the reverse: the work of building the particulars of concrete events in locally relevant contexts.

Work on gesture, for example, the analysis of *emblems* (Ekman & Friesen, 1969; Morris, Collet, & O'Shaughnessy, 1979), has frequently assumed that when someone recognizes the lexical affiliate of a gesture, its meaning is known. Not often though, is the issue that simple.[7] To establish the meaning of a term, must one must embed it within a relevant activity, a specific language game (Wittgenstein, 1958: sect. 7). In this very basic task of planning restaurant reservations, numbers play a part in two quite distinct activities: counting the *number of people* who will go the restaurant and establishing the *time* when they will go.[8] In line 12, Chil holds up his hand with all of his fingers stretched apart:

Example 2

| | | | |
|---|---|---|---|
| 1 | Pat: | So we'll see if they have a | table for five. |
| 2 | Chil: | Ye(h)s. | |
| 3 | Helen: | When? | at six a clock? |
| 4 | Pat: | °mm hmm | |
| 5 | Chil: | Yes. | |
| | | • • • | |
| 12 | Chil: | mmm. *Ni*h *n*ih duh duh. Da *du*h. | |
| 13 | Pat: | So *five* of us can fit there. | |
| 14 | | (0.2) | |


Pat interprets this (correctly) as counting people and accommodates it to the current line of talk: "So *five* of us can fit there" (line 13), and indeed "five" is the table size agreed upon several seconds earlier.

It is important to recognize that instead of a one-way hierarchical relationship, in which the encompassing activity contextualizes the meaning of the gesture, there is in fact a two-way relationship in which the frame, and the gesture embedded within it, mutually elaborate each other.[9] Thus, Pat can use a specific number that has become identified with a particular activity to locate that activity, that is, to choose the "counting people" frame that currently contains five, rather than other alternatives for the use of numbers also available and relevant in the current environment, such as setting a time for dinner.

## Competing frames

In line 14 (fig. 4.2) Chil changes his hand to display two more fingers (since his right side is paralyzed, he has only one hand to gesture with). Pat is now faced with the

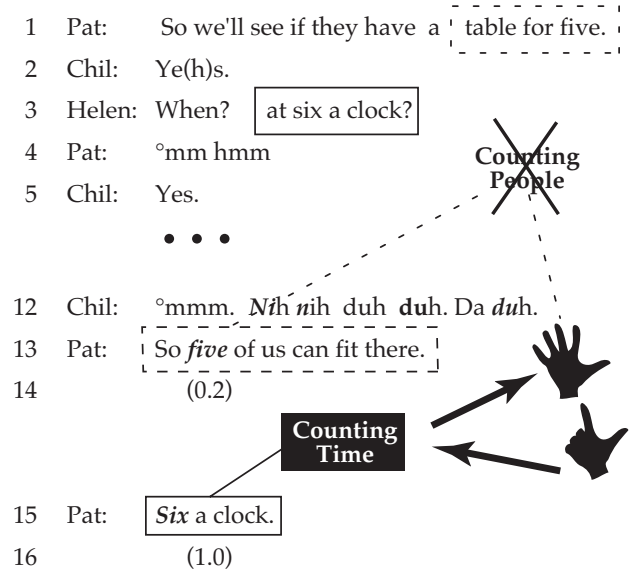



FIGURE 4.2. Competing frames

task of making sense out of this new number. In their earlier talk, any number higher than five referred to the time for dinner, and, though this is not visible in the brief excerpt shown here, there had been negotiation about exactly what time to go, with five, five-thirty, and six all being offered as possibilities. By way of contrast, the number of people who will eat had been treated as a given. Indeed, that number had been arrived at by simply counting everyone in the house. In light of this, Pat is following an entirely appropriate and relevant line of reasoning when she interprets the new number created by the gesturing hand, as a *time reference.*

As the original hand gesture, which provided the five included in Pat's six, is incorporated into this new interpretation, the *counting people* framework is abandoned.[10]

To look at these processes in more detail, I must describe some elements of the grammar Chil uses to organize his gestures. Briefly, I want to argue the unit required for the analysis of gesture here is not the hand in isolation, but instead a multi-party participation unit that encompasses the bodies of both gesturer and addressee, as well as the talk explicating the gesture. This framework is capable of dynamic change as events unfold through time.

## The interactive organization of Chil's gestures

Much insightful research has focused on what gesture might reveal about the mental processes of the party producing the gesture (McNeill, 1992). However, for Chil,

the accomplishment of meaning through gesture is a thoroughly social process, one that requires the intricate collaboration of others. Analysis will now focus on how his gestures are shaped and organized as interactive processes. Phenomena to be examined will include the detailed articulation of his hand, differentiating groups of related hand movements from each other through systematic use of the arm presenting the gesturing hand, the interactive organization of gesture space, and processes of sequential organization that provide for the display and negotiation of common understanding.

## Shaping gestures for recipients

Chil's handshapes are not simply signs for numbers but embodied sequences of movement that must be understood in a specific way by his interlocutors if they are to grasp what he is trying to tell them with these gestures. We will now look at the production of Chil's first two gestures. What the details of his action will reveal is that his gesturing hand is organized not only with reference to the concepts he is trying to express (in the most literal sense particular numbers) but also with an eye toward making crucial features of his handshape salient and understandable to his recipients.

Through almost all of this sequence, Chil's gesture with his thumb and index finger is interpreted correctly as the number *two* (e.g., as an increment to the original five-fingered handshape that identifies the number being worked with as *seven* in lines 20, 21, 27, 28, 31, 33, 34). However, when the gesture first appears, Pat treats it as adding *one* to the original *five*, saying in line 15, "Six a clock." Why is the handshape here treated as exemplifying *one* rather than *two*?

Chil displays the number *two* with his thumb and index finger (D in fig. 4.3). Moving to this new gesture from the initial *five* handshape (A) does not occur instantly, but instead requires a sequence of movement.

First, Chil folds the three fingers that won't be used in the second gesture into his palm (B). As he does this, his thumb also falls into his fist for a very brief moment before being immediately displayed again. The gesture then visible (C) displays two digits, the thumb and index finger. However, with the other three fingers retracted, the index finger is now very prominently positioned as a striking, isolated entity, almost like a lighthouse standing above the landscape formed by the rest of the hand. An interlocutor viewing this sequence of hand movements has grounds for seeing Chil displaying not only a possible *two*, but equally and perhaps more simply, a *one* with his index finger, especially in light of the fact that the number *two* is typically produced in Chil's community not with the thumb but instead with the index and middle finger (insert). The question might arise as to whether the thumb constitutes a counting digit when other fingers are still available.[11]

What happens next provides some evidence that the question of how this shape will be classified is an issue that Chil himself recognizes. He immediately rotates his hand so that the thumb is raised to the same height as the index finger (D). The

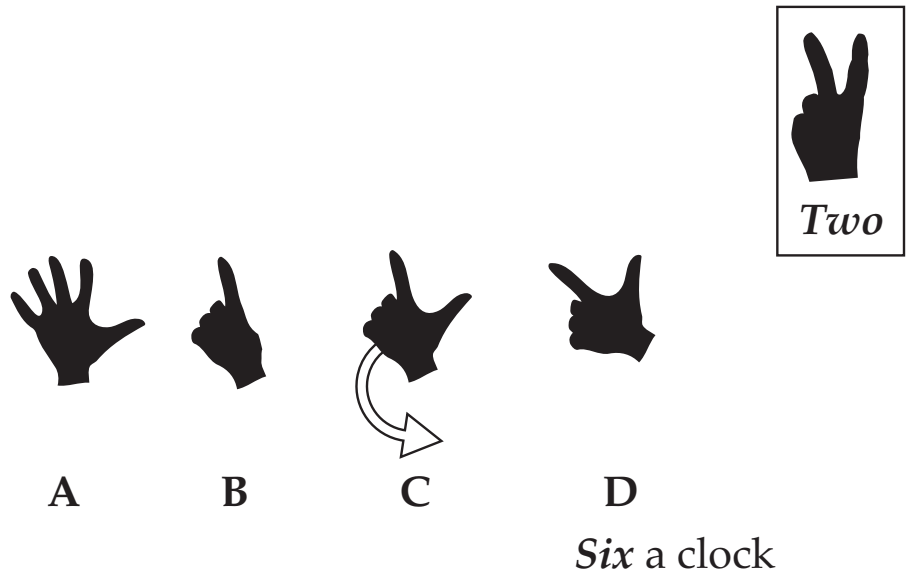



FIGURE 4.3. Moving from one handshape to another

handshape now displays a U-shaped figure with two distinct, equally prominent ends. This pattern of hand rotation, sometimes ending with the thumb higher than the index finger, is repeated throughout the rest of the sequence. However, by the time it first occurs at line 15, Pat is already saying "*Six* a clock" and thus treating the handshape as displaying a *one*.

If all that is at issue in the production of Chil's gesture is the outward expression of mental processes, the handshape at C is entirely adequate: holding up two digits constitutes an accurate external representation of the number *two*. The way in which Chil then goes to extra effort to reposition his hand so that both digits are made equally prominent for a viewer provides an example in gesture of what Sacks, Schegloff, and Jefferson (1974: 727) identify as "perhaps the most general principle which particularizes conversational interactions, that of Recipient Design."

## Parsing movement into coherent sequences

To count higher than five, Chil, who has the use of only one hand, has to produce a *sequence* of gestures: first a full hand signaling five and then a second handshape displaying additional digits. These hand gestures have to be interpreted not simply as numbers, *but as numbers to be summed together*. This process explicitly contrasts with something else that happens here: *re-doing* the counting sequence. In this activity, another handful of numbers is also displayed. But this is not to be seen as more num-

bers to be added to the existing sum, but instead as the beginning of another try at getting the meaning of the number right. Thus, at line 17 Pat says not "eleven" (an additional five added to the "six" she produced in line 15) but "*Five*":

Example 3

12 Chil: °mmm. Nih nih da duh Da duh.
13 Pat: So *five* of us can fit there.
14 (0.2) Add
15 Pat: *Six* a clock.
16 (1.0)
Start Over
17 Pat: *Five* people,

The separate gestures have to be grouped into relevant sequences. Correct parsing has real consequences for subsequent action: to build an appropriate next move, Chil's interlocutor performs different kinds of operations on different sequence types.[12] How are successive hand gestures grouped into relevant sequences? It might seem that this is an interpretive problem posed for the viewer of the gestures, for example, a mental act of classification. However, making visible coherent sequences, and disjunctures between sequences, is intrinsic to the embodied work doing gesture. The visible movements of Chil's body provide Pat with the resources she needs to parse the flow of his gestures into the separate action packages she requires in order to build an appropriate response to them.

The gestures to be summed together are consistently done in a particular way: first, the *five* is produced with all five fingers spread apart. Then, *while holding the hand in approximately the same position in space*, three of the extended fingers are closed. The constant position of the hand in space provides a unifying ground, a framework, within which the successive finger displays emerge as stages in a common activity.

This contrasts quite markedly with what happens when Chil signals that Pat's interpretation is wrong and redoes the gesture. Here, Chil rapidly drops his hand, *thus dismantling the stage for the hand created by the position of the arm in space*, and then raises it again. In essence the stage that provides a framework for the perception of the hand is cleared, and a new stage is created. On such a stage, a hand displaying numbers arrives as a fresh actor, one initiating a new counting sequence, rather than adding to a sequence already in progress.

Why doesn't this new stage signal Pat to move to a new activity or topic? While dropping his hand and then rapidly raising it again, Chil continues to stare intently at his interlocutor. The boundary between successive counting trials is thus embedded within a larger, unbroken framework of sustained focus on a continuing activity with a particular partner.

Rather than standing alone as self-contained units of meaning, Chil's handshapes are systematically informed by a nested set of hierarchical displays created by the rest

of his body: first, the movements of his arm that organize individual gestures into separate sequences; and second, his gaze (and the orientation of his upper body) that establishes continuity across the difference counting sequences made visible by his moving arm.[13]

## Securing orientation to the gesture

The way in which Chil uses his hand to bracket sequences of gestures is quite consistent with the work of Armstrong, Stokoe, and Wilcox (1995), who argue that the production of gesture involves not just the hand, but many other parts of the body, in particular the arms, moving through time in organized action. However, to analyze these data we have to go beyond the body of the party making the gesture to focus on a multi-party interactively sustained space that provides a framework for common orientation and the production of meaning. The necessity of such a framework can be seen in a number of different ways in this sequence. For example, the place where Chil makes his gesture is organized not only in terms of *his body*, but also with reference to the *position* and changing action *of his addressee*. Thus, Chil places his gesturing hand squarely in Pat's line of sight (fig. 4.4).

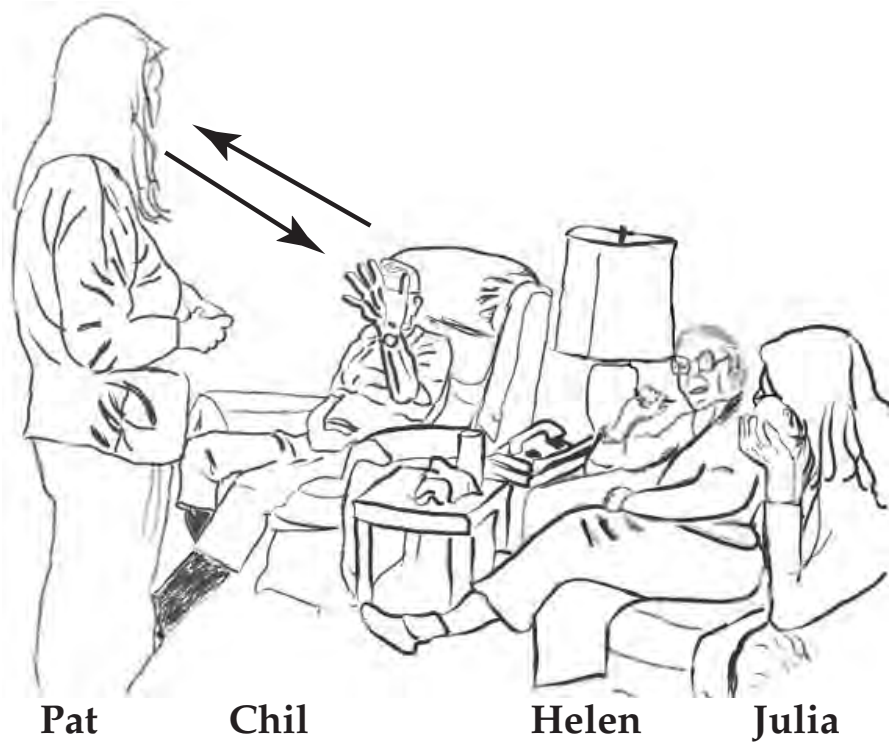
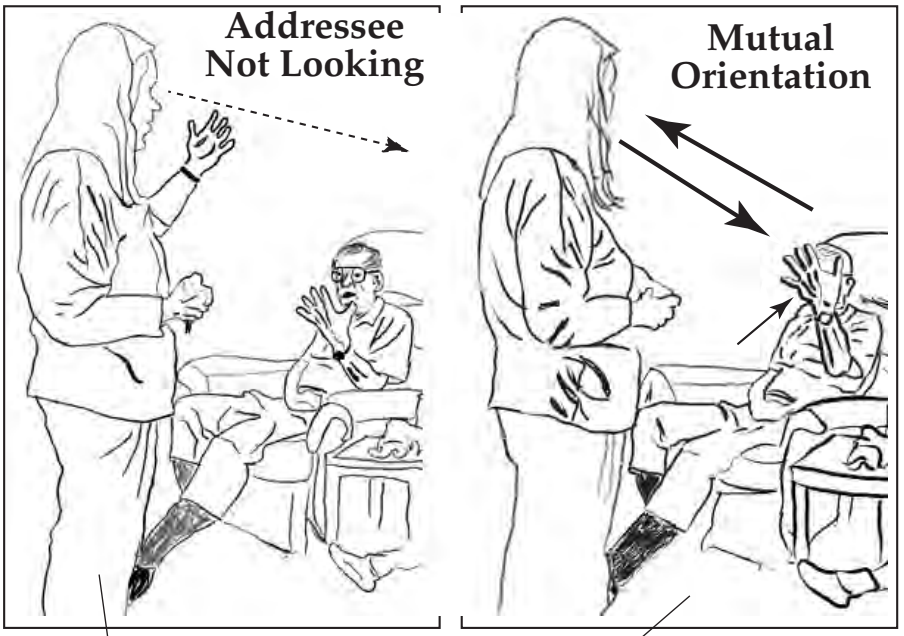



FIGURE 4.4. Multi-party gesture space

If Chil had been talking to Helen, the hand would have been placed quite differently. Gesture space is defined in terms of his interlocutor's body as well as his own.

Moreover, Chil changes the placement of his hand with reference to Pat's orientation. At the beginning of line 12, Pat is looking at Helen (fig. 4.5). Chil, who had been silent, holds up his hand in the *five* shape while producing an intonational tune:

FIGURE 4.5. Securing addressee gaze




Example 4

10 *hh We sat with them. (.)
11 There. ┌En then we-
12 Chil: └°mmm. └Nih nih da duh Da duh.
13 Pat: So *five* of us can fit there.

Chil's actions have the effect of drawing Pat's gaze to him.[14] Once she is looking at him, he raises his hand sharply into her line of sight, and this becomes the position used for gesturing throughout the remainder of the sequence. It would appear that his hand, initially in conjunction with his intonation melody, is performing two different, though interrelated actions: first, requesting the orientation of an addressee (by announcing that he has something to say); and second, producing a meaningful utterance, here a sequence of gestures, once his interlocutor is visibly positioned to attend to it. The process that occurs here is structurally analogous to the way in which a state of mutual orientation is negotiated prior to the production of a coherent sen-

tence in conversation. Parties who lack the gaze of a hearer produce phrasal breaks, such as restarts, to request such gaze and speak coherent sentences only after they have the orientation of a hearer (Goodwin 1980, 1981, chap. 2).[15]

In sum, the relevant framework for the analysis of Chil's gesture is not his hand in isolation, or even the entire body of the party performing the gesture, but instead a multiparty participation framework organized so as to constitute a common focus of attention.[16]

## Sequential organization

While such a framework provides a stage for working with the gesture, in and of itself it does not provide the resources necessary for the social constitution of what the gesture means. As this sequence demonstrates all too clearly, even within this framework different parties can understand the gesture they are looking at together in quite different ways. What is required in addition are the processes of *sequential organization* that tie Chil's gesture, and Pat's public gloss of it, into a common course of temporally unfolding, meaningful action. Within such a framework, how the gesture is to be understood can be challenged, negotiated, and collaboratively affirmed. Central to this process is a basic sequence in which first Chil produces a gesture and then Pat provides a gloss of it (fig. 4.6).

Within this sequence, the occurrence of a hand gesture by Chil makes it relevant for Pat to provide a gloss showing her current understanding of what he is trying to say. When Pat says "*Six* a clock" in this sequentially defined slot, Chil is able to see that she doesn't understand what he is trying to say.

On hearing Pat's gloss, Chil drops his hand, marking what she has said as in error, and then immediately raises it again. This move once again makes it relevant for Pat to provide a gloss of what he's trying to say (fig. 4.7).

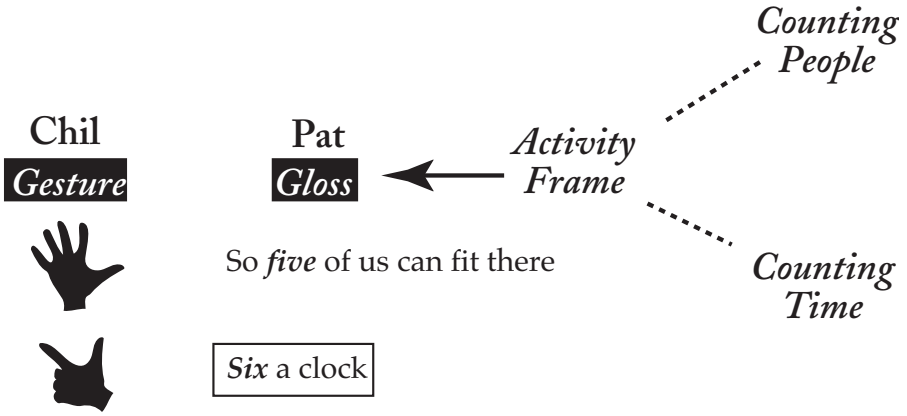



FIGURE 4.6. The sequential organization of Chil's gestures

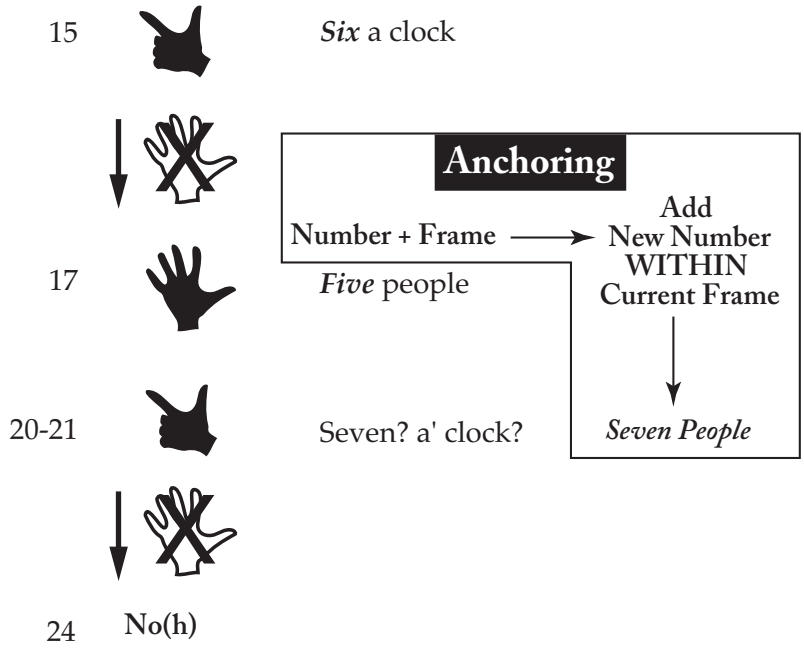



FIGURE 4.7. Anchoring

Starting from scratch, Pat in line 17 says, "*Five* people." It appears that Chil is trying to get Pat to follow a very simple strategy which I'll call *anchoring*. Pat's glosses take the form of a *number plus an activity frame*. By initiating the sequence from scratch, Chil gets Pat to produce a number lodged within the activity frame he wants. His inability to produce more than five fingers at a time now becomes a resource as well as a constraint: he can get Pat to produce a gloss of *five* alone, which embeds it within the *counting people* frame. If she now simply adds a new number within that frame, she'll have the solution he's looking for: "seven people." However, despite the simplicity of this process as a clear, logical procedure, Pat again treats the number as a possible *time* (lines 20–21), though here coloring her answer with greater uncertainty. And indeed other interpretive resources also available in the local environment (for example, the way in which the time they'll eat can be seen to have a negotiable status that the group itself doesn't) are consistent with her choice.

In response, Chil again drops his hand. However, this time, instead of continuing to gaze at Pat, he moves his head away from her and explicitly says "No." Both the withdrawal, which marks a break in the mutual focus that had been sustained with Pat until this point, and the "No" display to his interlocutors that Chil is having serious problems with the interpretive work that Pat is performing.[17] Shortly after this happens, the person who knows him best, his wife, shifts interpretive frames to at last recognize what Chil is trying to say (lines 28, 31).

Example 5

24 Chil: No(h).
25 Pat: *Si*x a clock.
26 (0.2)
27 Pat: *Se*ven?
28 Helen: °Seven people. Who ┌('d they be)
29 Pat: └Five.
30 (1.0)
31 Helen: Seven people. ┌Who *are* they.
32 Pat: └That's six.
33 Julia: Two?
34 Pat: ┌Seven? ((*Chil turns and points toward helen*))
35 Chil: └Duh da dah.
36 *Ye:s.*
37 (0.2)
38 Pat: Invite somebody?
39 Chil: *Ye:s.*

Frameworks for constituting meaning through gesture

For normal speakers, gestures typically arrive accompanied by relevant talk. Moreover, the gesture and its lexical affiliate are not only produced by the same person but are deeply intertwined in the development of a common structure of meaning (McNeill, 1992). The accompanying talk not only provides a resource for analysts of gesture, who can investigate in fine detail the precise timing of the unfolding course of the gesture and the words it elaborates (Kendon, 1983, 1994b; McNeill, 1992; Schegloff, 1984), but also for participants, who are easily able to find a relevant meaning in a speaker's moving hand. By way of contrast, the utterances of Chil examined here are done entirely through gesture. Moreover, successful analysis of his gestures has real consequences for subsequent interaction. Within this process, establishing the meaning of a gesture is repetitively posed as a problematic, practical task. The work done to accomplish this task throws into strong relief a range of procedures and resources used to organize gesture as a meaningful, interactively sustained activity.

For descriptive purposes, it can be useful to describe some of these structures in terms of a series of hierarchically embedded organizational frameworks.

1. One can begin with specific handshapes. Rather than being merely expressive, Chil's handshapes are carefully organized to guide specific interpretations by their addressees (see the discussion of his positioning his hand to ensure that *two* rather than a possible *one* is clearly visible).
2. Rather than being static signs, Chil's gestures are constituted through patterns of gestural movement (Armstrong, Stokoe, & Wilcox 1995),

which simultaneously provide information about the operations recipients should perform on the handshapes thus framed. The hand making a display is placed and held in position by an arm. Rather than constituting a constant, amorphous ground to the meaningful figure formed by the hand, the arm is itself an important actor in the organization of Chil's gestures. Its movements delineate the boundaries of relevant sequences of gestures within an extended flow of handshapes. Such parsing of the stream of his visible activity is absolutely central to the successful accomplishment of the tasks his addressees are engaged in, since they must perform alternative types of operations (e.g., summing two numbers together as opposed to starting a count from scratch) on different arrangements of successive handshapes.

3. Locating the lexical affiliate of a gesture does not constitute establishing its meaning. Wittgenstein (1958; Baker & Hacker, 1980) argues that the meaning of a name is not its bearer (e.g., some version of the number *five*), but rather mastery of the practices required to use that sign competently within a relevant language game. Here, multiple language games are at issue: first, the particular activity within which the practice of counting is embedded (e.g., *time* versus *number of people*); second, the larger projects within which an utterance such as *seven people* counts as a relevant move (e.g., a proposal that additional friends be included in the unfolding plans for dinner); and third, the frameworks and procedures that Chil and those around him deploy to make sense out of his gestures in order to accomplish relevant courses of action.
4. The gesture space required for the analysis of what Chil is doing encompasses not only his own body but also that of his addressee. Chil performs special gestural and vocal work to secure her visual focus on his hand and consistently places his hand in her line of sight.
5. Within this framework, one party's talk can gloss and explicate another's gesture. The elements required to assemble the meaning of a gesture are distributed entities, existing in different media (the moving hand and the talk which elaborates it) and, in this case, in the activities of separate participants. The distributed work required to constitute the meaning of a gesture is dramatically visible in Chil's case. However, it is present as well in the talk of parties who are able to speak. Indeed, much recent research on gesture has focused on its close ties to the structure of the talk that accompanies it (Heath, 1992; Kendon, 1994b; McNeill, 1992). McNeill, in his work on growth points, has demonstrated how talk and gesture might emerge from a common source in the production of an utterance. However, quite independent of the psychological origin of such a relationship, the

way in which a gesture and the talk it is tied to mutually elaborate each other constitutes a central arena for social practice in the organization of talk-in-interaction. It provides a key resource for participants faced with the task of making relevant sense out of the field of action embodied in a strip of talk and the co-occurring field of visible behavior within which it is embedded. Though gesture is typically treated as a transparent, seamless package, conversationalists can themselves deconstruct this unity for playful and other purposes. For example, the gestures being made by a speaker can be ridiculed by extracting them from her talk and then re-attaching them to a new, incongruent strip of talk (Goodwin & Goodwin, 1992). Seeing a gesture as a meaningful display characteristically involves not just orientation to someone's moving hand, but rather ongoing synthesis and mutual calibration of quite disparate kinds of information emerging through time within different modalities for expression available to the human body lodged within interaction.[18]

6. While an interactively sustained, multi-party participation framework provides a stage for the coordinated display of gesture and talk, something more is required to socially constitute its meaning: *sequential organization*. Pat's glosses can be wrong. It is only through temporally unfolding processes of interaction that Pat and Chil establish a common vision of what is being said with the gesture. Here, a range of disparate phenomena, including the talk and the visible body displays of separate people, is integrated into a common course of action.

## Conclusion: Some broader implications

The way in which Chil's gestures are deeply embedded within the talk of those around him provides an opportunity to probe basic procedures and frameworks deployed by parties in interaction to constitute meaning together. Chil's use of gesture is by no means the same as that of a person with unimpaired language abilities. Nonetheless, he is able to make himself understood. This is accomplished through systematic transformation of more general resources available for the organization of talk-in-interaction. Thus, in normal conversations, gestures frequently co-occur with talk by the party making the gesture. As this talk carries much (though by no means all) of what is being said, it is possible for hearers on occasion to grasp the substance of an utterance while paying only passing attention to the accompanying gesture, or even ignoring it entirely.[19] By way of contrast, the utterances of Chil being examined here are done entirely through gesture and thus must be attended to by at least one of his addressees.[20] Chil adapts to his gestural utterances one of the basic procedures used by speak-

ers in conversation to obtain the orientation of a hearer to an emerging strip of talk: securing the gaze of an addressee with a preliminary version of the gesture and then redoing the gesture once mutual orientation has been established. As Chil's gestures have the status of full-fledged moves within conversation (e.g., they *do* constitute his turns at talk), it is not at all surprising that resources used more generally to organize participation within the turn are now used to frame his gestures in ways that are not done for the gestures of participants able to speak.

Looking at these same issues from a slightly different perspective, it can be noted that the way in which Chil relies upon the actions of his interlocutors to build meaning and structure that is beyond his own capacities as an isolated individual provides a particularly clear example of what Vygotsky (1962; Cole, 1985) described as the Zone of Proximal Development. However, Vygotsky framed his analysis within a developmental theory: by working with a more experienced partner, the child was increasing his own abilities and competence. This emphasis on an individual's increasing mastery of complex activities has been maintained in more recent work in the Vygotskian tradition (for example Lave and Wenger's [1991] model of learning through peripheral participation within a community of practice). In contrast, Chil has suffered a massive *decline* in his competence, and there is no hope that his linguistic abilities will ever improve. Thus, while Vygotsky's emphasis on the social articulation of knowledge is quite relevant to these data, associated assumptions about an individual's increasing skill and competence that are central to any developmental theory simply do not fit at all. A way out of this impasse can be found by first shifting the unit of analysis from the individual to the social group (see Engeström, 1987; Hutchins, 1995) and, second, by abandoning the notion that evolution is to be equated with cummulative progress (Gould, 1989). Though Chil's abilities as an individual decline catastrophically, the social system within which he is embedded adapts to this crisis and evolves by creatively reshaping frameworks for the organization of interaction so that he is able to continue to function as a viable, indeed central, actor in the courses of collaborative action that make up their lives. Rather than unilinear progress within an individual, development can be seen as a processes embedded within a social matrix that occurs throughout the life cycle. As individuals change or crisis occurs, resources and tasks are redistributed within relevant social units and new forms of practice arise. This process has a micro-historical dimension as well, one that builds upon shared history. Chil is able to tell a story about events that happened fifty years ago by using gesture to get his wife to recall the relevant incident. As she talks, he acts as a co-teller by using gesture and intonation to comment on her talk. If Chil were treated as an individual and isolated from his family, for example, if he were to be put in a nursing home, not only his ability to act by using the resources of relevant others but also much of his memory would be lost as well. The relevant unit for the analysis of Chil's condition is not him as an individual, but rather the frameworks for the production of meaning and action within interaction that link him to the consequential partners who share his life with him.

The particular characteristics of this community have other consequences as well. Despite some moves toward organizing relevant contrasts within a larger system, Chil's gesturing is not in any way comparable to the well-developed sign languages of the deaf,[21] or speaking people prohibited from talking (Kendon, 1988). Thus, his gestures are not organized into elaborate, hierarchically organized structures through syntactic processes. Moreover, unlike communication in a signing community, his interlocutors do not operate under his constraints but instead use the full resources of talk-in-interaction. The work of Singleton, Morford, and Goldin-Meadow (1995) suggests that one very strong constraint inhibiting the elaboration of syntactic relationships between hand movements (i.e., the shift from isolated gestures to a signing system) is the way in which gestures remain parasitic upon the structure of co-occurring spoken language. When speech is present, links between hand movements are provided by the talk and thus do not have to be built into the organization of the gestural stream. Of course, in Chil's case the issue is complicated by the question of whether damage to his brain would make syntax impossible under any circumstances. Nonetheless the work of Singleton and her colleagues leads to the interesting possibility that the hybrid speech community that some stroke victims create with their interlocutors (e.g., one party using gestures and limited speech but tying that to the fully articulated language of others) might itself inhibit the elaboration of more syntactic organization in a stroke victim's gesturing system. Other social factors are at play here as well. Though half a million people suffer strokes in America each year, and three million continue to live with disability because of such trauma, most strokes (over 70%) occur in people over 65 years of age (Leary, 1995). Unlike the situation with the deaf where concerted political action has led to the formation of viable communities and relevant educational institutions, victims of stroke typically live out their lives disconnected from others in a similar state.[22] Thus, instead of an active, well-developed speech community using a language like American Sign Language (ASL) together, and passing it on from generation to generation, the communication of stroke patients develops within thousands of small, isolated pockets, and the special adaptations each family creates die with the person who suffered the stroke.

The processes being investigated here are relevant to a range of other issues as well. First, under the influence of Wittgenstein (1958; Baker & Hacker, 1985), renewed attention has been focused on the question of how people themselves use rules as visible, socially recognized phenomena to organize the activities they are pursuing. To make himself understood, Chil relies upon Pat following a set of public, rule-governed discursive practices embedded in the use of language, for example, counting and adding numbers in a systematic fashion and stating the products of such work in particular linguistic formats. Indeed, if Chil can get Pat to follow *five people* with *seven people*, he will organize the production of a syntactic unit that he is unable to speak (and possibly construct) himself. Rather than taking the form of hidden mental structures that require the ingenuity of a social scientist to explicate, the rule use visible in Pat's talk constitutes a public calculus, one that Chil uses as a resource for

the organization of his own action. Though the operations that Pat performs upon Chil's gestures to make sense out of them are completely appropriate, logical, and correct, initially she is unable to grasp what he is trying to say because she embeds his numbers within the wrong activity frame. This does not mean that the procedures she is using to analyze what he is telling her are in some sense defective or need better formulation so that a correct solution is always found. Such a search for bomb-proof criteria for the use of rules is fundamentally misguided. By relying upon each other to systematically use appropriate procedures for making sense out of the activities they are collaboratively pursuing together, Chil and Pat *do* eventually establish what they are trying to say to each other. Similarly, the real presence of multiple possibilities for construing which of several possible rules is to be applied at a specific juncture does not mean that the signs being worked with (such as Chil's handshapes) represent fuzzy concepts. Despite the presence of competing criteria provided by the different interpretative resources available to Pat, both participants recognize the sharp contrast between correct and incorrect solutions and work hard to remedy visible problems. The systematic constitution of meaning is a situated, contingent accomplishment, but one that can be successfully worked out through processes of action embedded within the architectures for intersubjectivity provided by the organization of human interaction (Heritage, 1984; Schegloff, Jefferson, & Sacks, 1977).

Second, gesture figures prominently in a number of recent hypotheses about how human beings might have developed language. In a very interesting series of arguments, Armstrong, Stokoe, and Wilcox (1994, 1995) note that a single gesture, such as one hand moving to *catch* something represented by the other hand, can constitute "a complete transitive sentence. It has a subject, a verb and a direct object, or, in semantic terms, an agent, action, and patient" (1995: 22). While this is certainly true, it nonetheless leaves unresolved the crucial question of how multiple parties—not only the person making the gesture but also his or her interlocutors—are able to understand it in the same way. Chil's handshapes are simpler and even more iconic than the examples given by Armstrong, Stokoe, and Wilcox; moreover, their possible meanings are heavily constrained by being embedded within a recognized activity organized in concert with his interlocutor. However, even under such ideal conditions, figuring out what the handshapes mean emerges as a difficult, problematic task for Chil's addressees. Indeed, though not examined in this chapter, even locating the target of a single pointing finger can take an extraordinary amount of work (see Goodwin, in press, and Haviland, 1998). Within an evolutionary framework, any proposed change in the structure of an organism must have consequences that extend beyond the individual; the development of a private language is not sufficient (such issues apply as well to Bickerton's [1990] hypotheses about mutations for syntax). What is required is a matrix of action within which the symbolic possibilities of gesture and talk can be organized as social phenomena. According to Armstrong, Stokoe, and Wilcox (1995: 218) "the primary problem for any speculative theory about the development of hominid social structure is to explain the origin

of the family as the principal unit of social organization." It can be argued instead that the primary form of human social organization—indeed, what defines us as a species—is language itself. Goffman (1964) argued that talk is itself a form of human social organization, a system that requires the systematic, organized collaboration of multiple parties. This has been amply demonstrated by research in the field of conversation analysis, with detailed study of the social organization of a host of phenomena, including turn-taking (Jefferson, 1973; Sacks, Schegloff, & Jefferson, 1974), repair (Schegloff, Jefferson, & Sacks, 1977), sentence construction (Goodwin, 1979, 1981), the social use of syntax by separate parties who collaboratively build single sentences (Lerner, 1987; Sacks, 1992a) and activities within sentences (Goodwin & Goodwin, 1987). As an elementary form of human social organization, talk-in-interaction insinuates itself into the core activities of most other institutions, from the family to decision making in the offices of presidents, the conduct of law courts and educational institutions, and so on. Within the frameworks for collaborative action, and the public, consequential constitution of meaning provided by sequential organization, the symbolic possibilities of both gesture and talk can flourish. In brief, the development of basic structures for the constitution of meaning and action within temporally unfolding processes of human interaction, such as sequential organization, would seem to be a prerequisite for the elaboration of the representational systems now found in both gesture and spoken language. Crucial questions about the origins of language become inaccessible if language is defined only as a symbolic calculus, rather than as a core human institution that constitutes a primordial form of social organization in its own right.

Throughout each day of their lives members of this family face, as an ongoing practical problem, the task of how to constitute shared meaning so that the courses of coordinated action that make up their life world can be accomplished. Such a task, which mobilizes language, gesture, and social organization for the accomplishment of action within consequential settings, sits at the very center of what it means to be human. This chapter has tried to demonstrate that it is precisely the flexible possibilities provided by the changing textures of relevancies invoked through emergent sequential organization, and the interactive organization of relevant participation frameworks, that makes it possible for an actor such as Chil to use gesture to build socially meaningful action. Drawing attention to the wide and important range of pragmatic competence he uses to make himself understood is not meant to suggest that he has the full communicational abilities of someone who can speak. If he could have said as simple a phrase as "seven people," all of the work examined here would have been unnecessary. However, the events investigated here do call into question traditional assessments of competence based purely on the ability to produce language.

Immediately after his stroke, Chil's doctors, focused entirely on the trauma within his brain, said that any therapy would be merely cosmetic and a waste of time, for the underlying brain injury could not be remedied. Nothing could have been farther from

the truth, and medical advice based on such a view of the problem can cause irreparable harm to patients such as Chil and their families. As an injury, aphasia does reside within the skull. However, as a form of life, a way of being and acting in the world in concert with others, its proper locus is an endogenous, distributed, multi-party system, within which language functions as a socially organized matrix of public practice.

## Notes

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1. A more limited analysis of the data examined here, focused on gesture rather than sequential organization, appeared as "Gesture, Aphasia and Interaction," pp. 84-98 in *Language and Gesture: Window into Thought and Action*, edited by David McNeill, Cambridge University Press, 2000.

2. Initially therapists tried to teach Chil a wide range of communicative strategies, and at some point he could speak one or two other words ("wine," for example). However, his vocabulary eventually stabilized on "yes," "no," and "and." These three words are central to the sequences of interaction through which meaning and understanding are negotiated in his family. I am using the word "choice" to frame as sharply as possible the issue of functional selection from a larger set of possibilities, not to indicate that there was some single moment when Chil decided which words he would learn, and which he would ignore. From another perspective, it is clear that his vocabulary in fact contains far more than "three words." As this chapter demonstrates, the terms "yes" and "no" encompass a broad range of functionally differentiated forms of action and meaning. Moreover, some of his intonation melodies (e.g., "*duh* duh *duh* duh *duh*" spoken with a characteristic pattern of pitch and stress) are used regularly and systematically to communicate specific stances and responses in much the way that "yes" and "no" are.

In this chapter, only Chil's use of "yes" and "no" will be investigated.

3. His medical records at discharge in 1981 report "severe expressive and moderate receptive aphasia, moderate dysarthria and verbal apraxia." There was never any improvement in his condition.

4. See, for example, the exemplary work of McNeill (1992) and his colleagues. The social and interactive organization of gesture has long been emphasized by Kendon (1997). A number of contemporary scholars are now investigating in most interesting ways how gesture is organized with reference to the environment within which it emerges (Hutchins & Palen, 1997; LeBaron & Streeck, 2000; Ochs, Gonzales, & Jacoby, 1996; Streeck, 1996).

5. For a comparison of script-based and sequential approaches to the study of the cognitive processes implicated in the organization of action, see Wootton (1997).

6. Though not developed in analysis of the present data, a considerable body of research demonstrates how such situated cognition also uses the tools and resources provided the environment within which action occurs (Goodwin, 1994, 1995b, 1997; Hutchins, 1995; Lynch,

1993; Suchman, 1987). Unlike earlier work studying cognition from the perspective of artificial intelligence, Gutierrez, Rymes, and Larson (1995) investigate scripts as interactively sustained frameworks in a way that is quite consistent withthe analysis developed here.

7. Indeed, as noted by Kendon (personal communication), not all gestures have lexical affiliates.

8. The use of a common counting system across multiple activities is itself a historically shaped process (Nicolopoulou, 1989). Patricia Mason (personal communication) has told me that in Quechua, Spanish numerals are used to count time, while Quechua numerals are used in other domains. Telling time with a numeric clock was a practice introduced by the conquest.

9. In defining the notion of frame, Fillmore (1982: 111) writes that "I have in mind any system of concepts related in such a way that to understand any one of them you have to understand the whole structure in which it fits; when one of the things in such a structure is introduced into a text, or into a conversation, all of the others are automatically made available. " For more extended discussion of how bits of talk invoke a relevant context for their proper understanding, see Duranti (1992), Garfinkel (1967), Goodwin (1996), Goodwin and Duranti (1992), Gumperz (1992), Heritage (1984), Sacks (1992a, 1992b) and Schegloff (1972).

10. For other analysis of how a category and the phenomena to which it is being applied mutually elaborate each other, see Goodwin (1994, 1996). The way in which Chil's five-fingered hand gesture repetitively flips between a time and person reference for Pat in this sequence brings to mind Wittgenstein's (1958: 194) famous use of the gestalt psychologists' "duck-rabbit" to demonstrate how the aspect from which we view something structures our perception of what we see there.

11. Other features of this sequence might also prime Pat to see *seven* as an unlikely number. Thus, once she is using *time* to make sense out of the number, seven o'clock might seem so much later than what they'd already agreed upon that repeating the earlier "six o'clock" would seem to be the most sensible choice for making sense out of his gesture.

12. In line 33, after being unable to find the meaning of *seven*, Julia does raise the possibility that the current handshape should instead be glossed as a *two*, that it should *not* be added to the gesture before it.

13. Kendon (1990) has stressed the importance of seeing the body as a locus for hierarchical displays of orientation. Armstrong, Stokoe, and Wilcox (1995) call attention to the importance of seeing both gesture and spoken language as 1) providing "words," (e.g., rich concepts), and 2) syntax, (e.g., procedures for establishing systematic relationships between concepts). It is clear that Chil lacks syntax in spoken language and, probably does not possess it for gesture either. However, as this sequence demonstrates, he is able to link separate gestures into larger patterns. This suggests that a variety of structures can be used to organize gestural units into larger wholes, but that only some of these constitute *syntax* in the linguistic sense.

14. For other analysis of how parties making gestures both work to focus the gaze of their recipients on the hand(s) making the gesture, and redesign the gesture after its addressee visibly misunderstands it, see Streeck (1993, 1994). For discussion of research pertaining to the question of whether gestures in conversation are in fact communicative (a position that has been challenged by some psychologists), see Kendon (1994b).

15. It is interesting to note that in both situations the item used to solicit orientation is an incomplete version of the utterance or gesture that will constitute the substance of the proposed turn.

16. See Hibbitts (1995) for an analysis of the importance of multi-party participation frameworks for the organization of gesture in the legal system.

17. For related analysis of how such a withdrawal cues others to shift the frame they are using to make sense out of Chil's talk, see Goodwin (1995a).

18. The web of meaning implicated in the organization of gesture does not stop at the actors' skins but encompasses as well features of their environment and historically structured representations of many different kinds (maps, images, graphs, computer screens providing access to worlds beyond the immediate situation, etc.), which give meaning to gesture in a variety of different ways. See, for example, C. Goodwin (1994, 1995b), M. H. Goodwin (1995), Heath (1992), Heath and Luff (1992), Hutchins (1995, 1997), LeBaron and Streeck (2000), and Ochs, Jacoby, and Gonzales (1994).

19. This does not, however, mean, as some psychologists have suggested, that participants in ordinary conversation entirely ignore gesture. For analysis of how speakers reshape emerging action to take into account displays made through gesture, see M. H. Goodwin (1980) and Kendon (1994a).

20. Helen, the person who at last figures out that *seven* is counting people, never turns her head to look at Chil's hand. It is possible that she relies upon Pat's talk alone for access to Chil's gestures.

21. For especially interesting analysis of the development of syntax in a sign language system, and the way in which such a system differs radically from not only gesture but also more primitive signing systems, see Kegl, Senghas, and Coppola (1999).

22. In many cases, including Chil's, stroke victims are able to draw upon the resources of their families, especially their partners. While absolutely central to constituting a relevant and meaningful life world, this situation can place an extraordinary burden on those closest to the stroke victim, who are aging themselves.

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