8

Transparent vision*

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8.1 Transparent vision[1]

When linguists use the term *grammar* they typically restrict the scope of that term to *sentential grammar*, e.g. rules, structures and procedures implicated in the production of well formed sentences and their subcomponents. In this paper the scope of the term grammar will not be limited to phenomena within the stream of speech, but will also encompass structures providing for the organization of the endogenous activity systems within which strips of talk are embedded. The following (which is analyzed in detail in Goodwin and Goodwin, 1987a, 1992) provides an example of what is meant by an interactionally situated grammar for the production of relevant activities. Here Nancy evaluates an asparagus pie Jeff made as "s : : : so : goo :d." Before she has spoken the word "*goo:d*" Tasha begins an equivalent assessment of her own: "I love it."

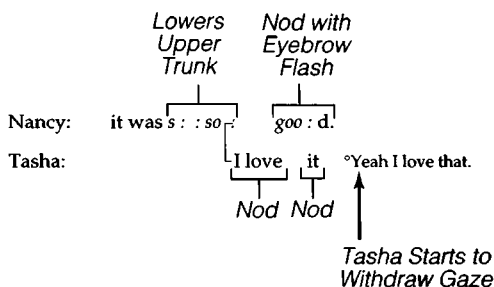Nancy: *Jeff* made en asparagus pie

Figure 8.1 Concurrent assessments

The sequential organization of the talk that occurs here provides a very strong display of agreement. By starting to speak *before* Nancy says "*goo :* d" Tasha demonstrates that she is so in tune with Nancy that she is willing to commit herself to a position about the pie without having yet heard Nancy's. She does not however say exactly the same thing as Nancy. By using present tense to talk about asparagus pie as a food category, rather than matching Nancy's past tense reference to a specific pie, Tasha makes visible her different access to what is being assessed, e.g. the fact that each party is viewing the phenomenon being assessed from a different position is made visible in the structure of their talk. Moreover, what emerges from their overlapping talk is not merely two matching propositions about the pie, but a collaborative display of mutual appreciation that extends beyond the talk itself to encompass the participant's affect as a socially organized, collaboratively sustained phenomenon. As the assessment adjective is spoken both parties are gazing toward each other while nodding in appreciation, while simultaneously Nancy heightens the affective stance she is taking toward the pie with both an eyebrow flash and intonational enhancement of "*goo:d*." How can the participants disengage from such a state of heightened mutual orientation without downgrading their mutual assessment? A moment later Tasha modifies the participation framework made visible by the mutual alignment of their bodies by withdrawing her gaze from Nancy, while simultaneously showing continuing appreciation of what Nancy said by repeating her assessment.

Rather than looking at the talk, intonation, and body movement that occurs in this example as different channels of behavior to be analyzed separately, it seems more profitable to conceptualize what is happening as a single, *interactive activity* of assessment that the participants collaboratively recognize, bring to a climax or peak, and then withdraw from. This activity knits an array of heterogeneous phenomena – syntactic position, intonation, body movement, displays of agreement, differential access to a world beyond the activity, etc. – into a coherent course of collaborative action.

While investigation of how such multi-party interactive activities are organized encompasses a range of phenomena other than the grammar of sentences, it is quite consistent with Wittgenstein's

(1958) notion of grammar as analysis of the patterns of organization that provide for the orderliness and intelligibility of the diverse language games within which talk and human action are embedded. Moreover, such analysis can shed light on a range of phenomena relevant to the deployment of syntax and other phenomena within sentences that are obscured when sentences are analyzed as isolated, self-sufficient entities. For example how is it possible for participants to *systematically* accomplish the coordinated action visible in the present data? Looking again at Nancy's utterance it can be observed that the assessment adjective which is overlapped by recipient's concurrent assessment is preceded by an intensifier: *"so"*:

Nancy: *Jeff* made en asparagus pie
         it was ⌈s : : *so*⌐:⌉   *goo* : d.
Tasha: ⌊ I love it.   °Yeah I love that.

Figure 8.2 Intensifier precedes assessment adjective

Moreover this intensifier is spoken with enhanced intonation (indicated by the italics and colons in the transcript). Speaker's involvement in her display of heightened appreciation thus begins before the assessment adjective itself is actually spoken. This raises the possibility that the recipient might use the intensifier to *project* what is to be said next: an assessment adjective such as "good," and indeed the end of the intensifier is the place where the recipient begins to produce her own concurrent assessment. Syntactic structure places constraints on what can occur next in a strip of talk. This provides an unfolding horizon of future possibilities that the recipient can use as a resource for the organization of her own action. Thus, by applying her knowledge of the syntax of English to the talk so far produced, the recipient can anticipate in some detail what that talk might become as it unfolds through time. Visible structure in the stream of speech interacts with grammatical knowledge to provide resources for the accomplishment of coordinated social action.

Several features of this process that are relevant to the analysis to be developed in the present paper will be briefly noted. The mutual concurrent assessment provides an elementary example of human social organization, e.g. a form of action constituted through the differentiated but collaborative work of multiple participants. A key

issue posed for the systematic production of such action, for participants as well as analysts, is how the separate parties know, and know together, what is going on such that each is able to produce at the appropriate moment specific forms of action that are linked in fine detail to relevant actions of her coparticipant. Thus for participants engaged in the production of joint collaborative action intersubjectivity emerges as a practical problem, and moreover one that must be resolved within tight time constraints (in these data within the scope of a very short utterance).

To maintain a developing sense of what it is that's happening, how each of them is positioned in that process, and what forms of action can count as relevant next moves in the activity of the moment it would appear that participants simultaneously attend to a range of different types of organization. First, *sequential organization*, a grammar for the production of talk-in-interaction that has been the object of sustained investigation by conversation analysts (Sacks, 1992; Sacks, Schegloff, and Jefferson, 1974; Schegloff and Sacks, 1973). For example adjacency pairs such as question–answer, greeting–return greeting, etc., provide structures that link the differentiated actions of separate parties into patterns of collaborative action that cannot be decomposed into their separate components without losing essential features of their organization, e.g. the status of an utterance as an *answer* cannot be determined by looking at it in isolation, but only by noting its sequential placement after some prior *question* (or other first pair part). The emphasis by conversation analysts on the systematic organization of sequences encompassing multiple actions and participants constitutes a strong alternative to speech act theory with its focus on the analysis of individual sentences and utterances in isolation (Levinson, 1983). Moreover, by virtue of properties such as *conditional relevance* (Schegloff, 1968) each next move in such a sequence provides a framework of intelligibility for the production and interpretation of subsequent action, constituting what Heritage (1984b) has called an architecture for intersubjectivity.

Second, as was seen in the asparagus pie data, participants attend to *sentential grammar* as a resource for the organization and production of collaborative action within interaction. Indeed as analysis of phenomena such as how a later speaker extends the sentence of an earlier speaker by adding new, syntactically appropriate units

to that talk (Lerner, 1987, 1993; Sacks, 1992), or subsequent speakers reuse and transform elements of earlier talk in order to build an apt counter to that very same talk (Goodwin and Goodwin, 1987b), or of how single propositions are constructed across the utterances of different speakers (Ochs, Schieffelin, and Platt, 1979) demonstrates, sentential syntax constitutes a pervasive resource for tying the actions of one party to those of another, e.g. it should occupy a central place not only in linguistics but also in the analysis of social organization by sociologists and anthropologists (see Sacks, 1963 for an early statement of this argument). Similarly the indexical properties of language (Hanks, 1990) link elements of talk to features of the context that an utterance both emerges from and further helps to constitute (Goodwin and Duranti, 1992). A substantial part of the present paper will be devoted to the analysis of prospective indexicals.

Third, the production of talk and other forms of action is situated within *participation frameworks* of various types. Like sentential grammar and grammar for interaction these frameworks provide for the appropriate ordering of relevant elements, for example participant categories such as speaker and hearer. Some demonstration that participants actually attend to the distinction between well formed and inappropriate participation arrangements is provided by the fact that they not only recognize unacceptable combinations, but take active steps to remedy such situations. Thus a speaker who discovers that she is addressing a hearer who is not displaying orientation to her, will frequently mark the talk in progress at that point as defective (by for example abandoning her current sentence and beginning a new one) while taking active steps to secure a hearer (the phrasal breaks produced by her current unit of talk act as requests for the gaze of a hearer). Similarly addressing an utterance to structurally different kinds of hearers can lead to changes in both the length and the meaning of a speaker's emerging sentence so that its appropriateness to its recipient of the moment can be maintained and demonstrated (Goodwin, 1981). Particular kinds of talk, e.g. stories, laughter, opposition sequences, etc., invoke specific participation frameworks. A speaker can quickly and powerfully change the social organization of the moment by shifting to a different kind of talk with a new participation frame-

work and thus reorganizing how those present are aligned to each other (Goodwin, 1990: chapter 10).

The organization of participation can be analyzed in at least two rather different ways. The first, which uses the work of Goffman (e.g. 1979) as a point of departure focuses on the description and analysis of typologies of participant categories (see in particular Levinson, 1987 and Hanks, 1990 for a critique and attempt to develop a more parsimonious grammar of participant categories). However it is also possible to analyze participation as a temporally unfolding, interactively sustained embodied course of activity. In the asparagus pie data while Nancy and Tasha constituted each other as speakers and addressees through not only talk but also mutual gaze (e.g. enacted the prototypical participant categories noted by Goffman and others as central to the production of a state of a talk), they also used temporally unfolding changes in visible participation to organize their movement toward, and then withdrawal from, the state of heightened mutual orientation at the climax of the assessment activity. More generally, while it is easiest for the analyst to display congruence in assessments on the printed page by noting similarities in their propositional content (as was done here), quite frequently it is phenomena such as intricate matching of intonation which creates the most powerful demonstration of not simply cognitive agreement but shared affect and coparticipation in a common framework of action. From such a perspective participation is not simply the instantiation of a particular analytic category for classifying participants, but an embodied activity, one that provides for the collaborative constitution of a shared stance lodged within vivid, unfolding, interactively organized experience. As the work of Jefferson (1979, 1984) showing how laughter is interactively organized syllable by syllable and Ochs and Schieffelin (1989) on affect in language demonstrate, such pheno-mena are not instances of disorganized "flooding out" but structured activities amenable to grammatical analysis.

In brief, the tasks of achieving joint action pose as a practical problem for participants the issue of mutual intelligibility. In order to provide organization for, and make inferences about, the unfolding structure of the activity they are engaged in participants attend to a range of phenomena including sentential grammar, sequential

organization and participation frameworks. All of these phenomena are constituted through the embodied actions of the participants.

Key components of many activities involve orientation toward, and operations upon, a relevant environment. Such classifications are elements of language, and the issue of how language structures perception of the phenomenal environment of the group using it has been one of the enduring concerns of anthropological linguistics. Typically, following Whorf's (1956) analysis of how the grammar of Hopi differs from that of English in the way that it structures events, investigation of this issue has focused on comparisons between the semantic and syntactic organization of different languages. By way of contrast the present paper will examine how language structures perception within the context of situated activity by focusing on the organization of talk-in-interaction used to perform work tasks in a specific setting. Grammar occupies a central place in this process, as will be demonstrated by analysis of how prospective indexicals and ascriptive sentences are deployed to make sense out of relevant events in the group's working environment. However, when such structuring of perception is analyzed within situated interaction it will be seen that an equally important role is played by processes of organization constituted through language that were completely ignored by Whorf, e.g. the power of language to invoke temporally unfolding participation frameworks through which the actions and perception of multiple participants can be calibrated into a visibly displayed common stance toward the events being scrutinized.

8.2 The operations room

The setting that provides the data for the present analysis is the **operations** room that controls ground operations for a large airline at one of its hub airports.[2] The operations room is responsible for coordinating ground operations for the airline, for example making sure that baggage is transferred from incoming to outgoing flights, obtaining information about potential delays, keeping statistics on flights, etc. The operations room is not the tower, which is run by the airport itself and controls planes on runways and in the air. However, like the tower the operations room functions as a *center of coordination*.[3] A single task or activity, e.g. adapting to a delayed

Figure 8.3 The operations room

flight carrying passengers for subsequent outgoing flights, will require simultaneous but separate work by a number of different airline work crews (passenger service, ramp service, etc.). Workers in the Ops Room are faced with the tasks of determining what has to be done, contacting the different crews responsible for doing it, and co-ordinating and checking on the progress of those activities.

Though all Ops Workers have experience in at least some of the work crews being coordinated, they do not themselves go out to the ramps and gates where planes are actually parked, serviced, loaded and boarded. Instead they work together in a single interior room. However, in that room they require simultaneous perceptual access to events at many different locations. The Ops Room is thus equipped with many different tools – telephones, radios of various types, computers tied into the airline's nation-wide network, etc. – designed to extend the perception of workers within it to the distant settings that are relevant to their work. Of particular importance to the present analysis is an array of monitors at the front of the room which are connected to television cameras outside each gate:
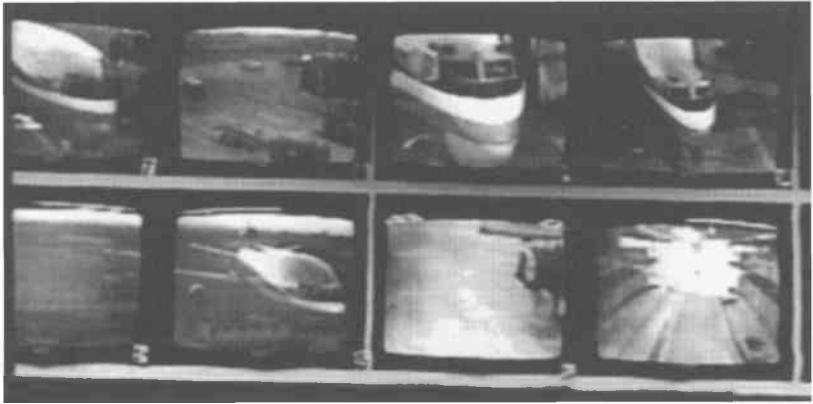
Figure 8.4 Gate monitors in front of the operations room

By glancing at these screens Ops Workers can look into a distant environment that they are charged with monitoring.

The Ops Room was arranged as shown in Figure 8.5 and contained a number of different stations. In order to encompass everyone in the room we videotaped with two cameras, one covering the left side of the room and one the right. Workers seated in the center of the room were visible on both cameras. A third camera was used to make closeups of the screens and other materials being worked with.

The diverse, heterogeneous, collection of tools found in the Ops Room at any single moment in time constitute a material sedimentation of solutions found in the past to the repetitive tasks and problems that constitute Ops work. The tension between the repetitive, habitual character of the work done in the Ops Room, and the novel character of each next emergency as an event requiring a fresh improvisation, a new mix and articulation of the resources provided by the room, cannot be overemphasized. A tool, such as a television link to a distant setting, bridges (without fully resolving) the contradiction between the need for a single operations center whose workers are copresent to each other, and their simultaneous need for immediate access to diverse locations.

The monitors that allow Ops workers actually to gaze at the gates and places they are working with do not however provide transparent access to these settings. Instead, the ability to see events on these screens that can be used to help accomplish work in progress
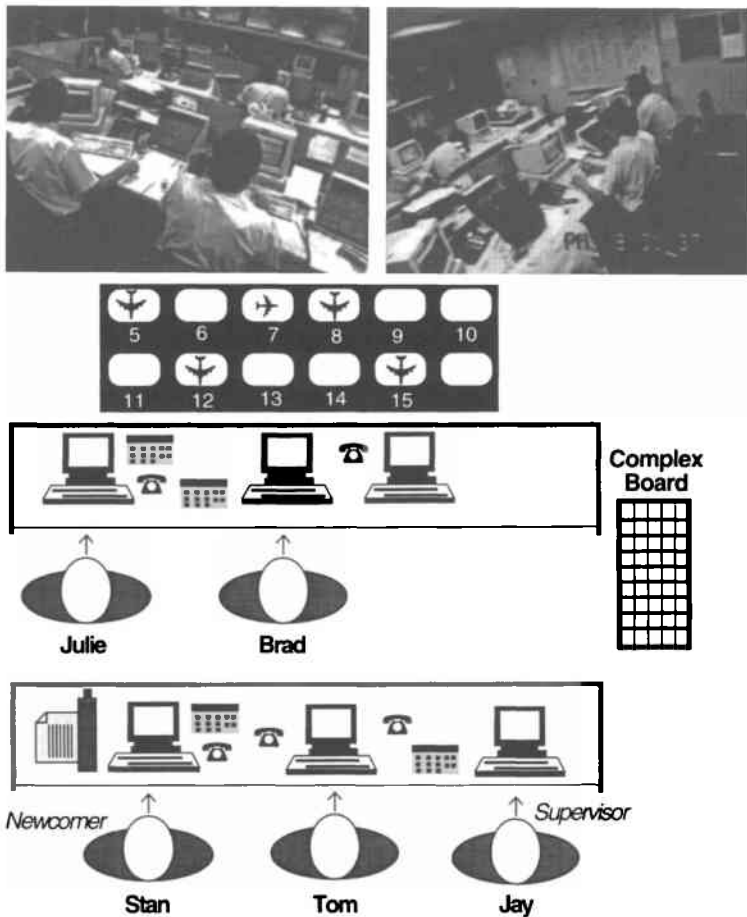
Figure 8.5 Participants and tools in the operations room

constitutes one type of endogenous craft knowledge situated within the larger complex of activities that make up Ops work.

8.3 Seeable trouble

The events which will now be examined provide us with an opportunity to investigate in more detail how talk in interaction and the proper seeing of work relevant phenomena mutually inform each other. The workers in this Ops room have just moved into a new terminal. In the old terminal passengers walked out onto the runway and boarded their flights by climbing up a set of movable stairs

that was brought to the side of each plane. In the new terminal
passengers never step outside but instead exit and enter through a
jet bridge, a flexible tunnel that runs from the terminal to the door
of the aircraft. These Ops workers have only had a few weeks of
experience working with the jet bridges in their new environment.
In the following Brad gets a radio call about a problem with the jet
bridge at gate A12. To separate the radio conversation from other
talk in the Ops Room boxes are drawn around talk within it and

Gate:	Operations, Come in.	1
	(2.4)	2
Brad:	Go ahead Mister Wilson.	3
	(3.5)	4
Gate:	Yeah Pete	5
	We *de*finitely have a problem here on this je:t bridge.	6
	(3.2)	7
Jay:	Which gate.	8
Brad:	What gate.	9
	(2.1)	10
Gate:	A: twelve.	11
	(2.0)	12
Brad:	Do you ⌐know what the: problem is.	13
Julie:	└ Uhoo: : : eh : : :	14
Julie:	It's covering ha⌐lf of the *ai(h)r*pl(h)ane.	15
Jay:	└ Eh Heh Huh huh huh huh	16
Gate:	It's not taking ground power to the aircraft.	17
Jay:	Ah man.	18
Julie:	Ou: : : that's bad.	19
Gate:	A:n⌐d,	20
Stan:	└hh Ha⌐Ha Ha °ha ha ha°	21
Gate:	└the power presumably is not cutting	22
	off on it-on the je:t bri:dge.	23

Figure 8.6 Seeable trouble

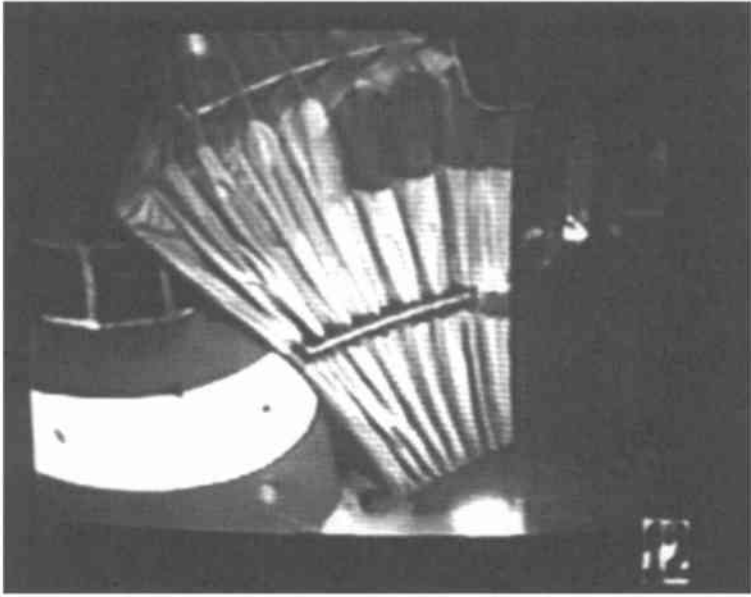Figure 8.7 The canopy of the jet bridge

marked with walkie-talkie icons. For clarity square cornered boxes are drawn around the report of trouble and the reaction of those in the room to it. Upon seeing the image on the A12 gate monitor the room erupts into laughter (lines 14-16, 21). Figure 8.7 shows what they were looking at.

Those in the Ops Room treat the problem visible on the A12 gate monitor as absolutely transparent. They break into spontaneous laughter as soon as they see the position of the canopy (and indeed the ethnographers at the back of the room, myself included, silently joined into the laughter engendered by the scene); Julie in line 16 describes what is wrong with the jet bridge in the image visible on the monitor: "It's covering half of the *ai(h)rp*l(h)ane;" and then in line 20 explicitly evaluates the situation: "Ou::: that's bad." Shortly after the data shown here a newcomer asks "What is the problem with it." The supervisor replies by telling him to "Look at the: uh canopy," i.e. all that one has to do to find the problem is look at the image on the screen.

Such transparent vision is subsequently shown to be deeply problematic. Six minutes later, after a talk with the ramp crew that

Stan:	Okay Thanks a lot.	1
☎	(1.0)	2
	Okay Bye Don.	3
Stan:	Yeah,	4
	Don says │there's no problem│ ◄─────	5
	│with the jet bridge at all.│	6
	That was a crew chief calling in	7
	to say there ┌was a problem with it.	8
Julie:	└°Tell me that's- │((Looking at Gate Monitor))│ 9
	│That's not ┌normal!│ ◄─────	10
Stan:	└With the ground power unit.	11

Figure 8.8 No problem

reported the problem, Stan turns to the rest of the Ops Room and reports (line 5-6) that there is no problem whatsoever with the jet bridge itself. Instead, consistent with Gate's original report (cf. lines 17, 22-23) the problem is confined to the Ground Power Unit.

Julie's incredulous "That's not normal!" goes to the heart of the anthropological concept of culture, i.e. the specification of what counts as normal within the lifeworld of a particular group. Indeed in these data we are able to catch a glimpse of the social and historical processes through which a community accumulates experience of the habitual scenes that constitute their working environment, and articulates for each other how these scenes should be properly interpreted. Through their work this night they come to see more clearly what constitutes the "normal appearance" of one of the objects that will figure repetitively in their work, the representation of a jet bridge on their gate monitors.

The way in which the room's initial view of the scene is subsequently made problematic illustrates quite vividly how such transparent vision is very much a crafted object. I now want to investigate in more detail the procedures used by those in the room to build this transparency. What subsequently happens to this image has the advantage of foreclosing arguments that would account for the laughter, and the trouble seen on the screen, by some notion of correspondence between perception and external event, i.e. the participants are just laughing at something that is in

fact deviant. By using as a point of departure an object that was subsequently found to be "erroneous" I do not in any way want to suggest that interactive and social factors account for error while "true" vision transcends social biases (e.g. violate Bloor's (1976) principle of symmetry), but instead want to demonstrate just the opposite, that any such transparency of vision is something that is artfully crafted within an endogenous community of competent practitioners. Indeed, as these very data demonstrate, by continuing to massage and further transform the work relevant object visible in the screen through interaction with each other and their tools the Ops workers themselves eventually come to a quite different sense of it, i.e. their subsequent vision is as thoroughly social as the initial seeing that they eventually reject. In so far as the object being worked with does not exist as an independent entity somewhere "on the screen" or "at the gate" but is instead constituted through their interaction with that screen and each other in ways that are shaped by the tasks at hand, that object has both a distributed and a dynamic existence.[4]

8.4 Instructions for seeing

Though only one person in the Ops Room, Brad, actually talks to the man at the gate who is reporting the trouble at the jet bridge, all those in the Ops Room are situated within an interactively rich, tool saturated "backstage" from which they can attend to, and indeed collaborate in the production of, Brad's call. From this position they can use the talk in the call to interpret the images visible on the screens of the gate monitors, and reciprocally use those images to interpret the talk. How does that talk organize their interpretation of the screens in front of them such that they can independently and spontaneously find the "trouble" with the canopy? To begin to answer this question let's look more closely at how Gate's initial report of the trouble is structured as a discursive object which sets its recipients particular kinds of cognitive and perceptual tasks:
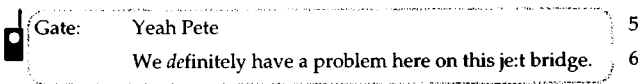
Gate:	Yeah Pete	5
	We *definitely* have a problem here on this je:t bridge.	6

Figure 8.9 A prospective indexical

The term "problem" is an instance of what I will call a *prospective indexical*. The sense of what constitutes the "problem" is not yet available to recipients but is instead something that has to be discovered subsequently as the interaction proceeds. Recipients are set the task of attending to subsequent events in order to find what particulars constitute "the problem" on this specific occasion. One prototypical environment for the occurrence of prospective indexicals is story prefaces, e.g. "terrible" or "wonderful" in utterances such as the following:

Teller: The most *wonderful/terrible thing* happened to me today.

Recipient: What happened.

Teller: ((*Produces story*))

Recipient: ((*Responds to story*))

Sacks (1974) notes how the characterization of the upcoming story provided by the prospective indexical within a story preface gives its recipients
(1)   A framework for interpretation;
(2)   A place to apply that framework: the talk following the preface sequence; and
(3)   A motivation to engage in such analysis. Recipient is expected to respond to the story in an appropriate fashion when it reaches its projected climax or termination. The prospective indexical both helps recipient locate when that point has occurred (i.e. find that something "funny" or "terrible" has happened) and proposes the type of response that is relevant (i.e. laughter is an appropriate response to a story characterized as "funny" but not to one foreshadowed as "terrible").
The occurrence of a prospective indexical thus invokes a distributed, multi-party process. The cognitive operations relevant to the ongoing constitution of the event in process are by no means confined to speaker alone. Hearers must engage in an active, somewhat problematic process of interpretation in order to uncover the specification of the indexical that will enable them

to build appropriate subsequent action at a particular place.[5] Moreover this analysis is not static, complete as soon as the prospective indexical is heard, but is instead a dynamic process that extends through time as subsequent talk and the interpretative framework provided by the prospective indexical mutually elaborate each other. Moreover the nature of the collaborative work being done with a prospective indexical is shaped by the environment within which it occurs, e.g. the larger tasks of the story telling shape the particular ways in which both hearers and speakers use and find the appropriate sense of prospective indexicals that occur within story prefaces.

The sequential environment within which the term "problem" occurs in these data has essential similarities to that of the story telling sequences analyzed by Sacks. Thus an initial report that trouble exists ("We definitely have a problem here on this je:t bridge" line 5) is followed by recipient's request for elaboration ("You know what the: problem is" line 14), which leads to teller's description of the problem ("It's not taking ground power to the aircraft", etc., lines 18, 21, 23–24). The prospective indexical "problem" has its sense specified and filled in as the sequence between Brad and Gate unfolds.[6]

Story Preface *(Sacks 1974)*

1) A Framework for Interpretation
2) A Place to Apply that interpretaton (subsequent talk)
3) Motivation for such analysis
   (Recipient's subsequent actions built upon it)

Gate: We definitely have a (problem) here on this je:t bridge.
      . . .
Brad: You know what thuh: problem is.
Gate: It's not taking ground power to the aircraft ...
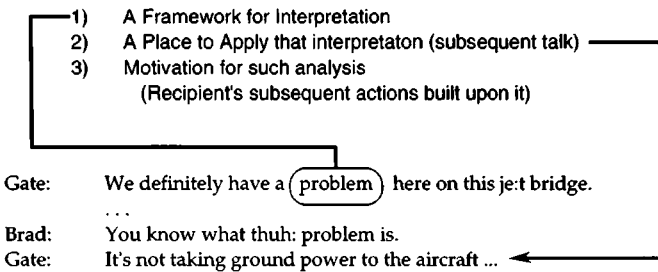
Figure 8.10 Structuring interpretation within sequences of collaborative action

The environment used by these participants to uncover the sense of "problem" that is relevant to their work does however include more than this sequence. First, Gate's initial report describes a place other than subsequent talk where the problem can be found: "on this je:t bridge." Second, unlike parties who have no access to a nonpresent event except through a speaker's talk,

workers in the Ops Room can use their video monitors to look at the gate themselves. Third, the explicit work that the Ops Room is charged with accomplishing is precisely resolving "problems" such as this. Resolution of that problem, which has not yet been specified, may well involve work by others than Brad. Even parties who will not produce a response to Gate's talk (i.e. everyone other than Brad) have a motivation not only to listen to what he says, but actively try to disentangle for themselves a relevant sense of what the "problem" is. By comparison with the prototypical telling sequence analyzed by Sacks, the work activity of the Ops room provides its inhabitants both an expanded motivational framework for trying to resolve as quickly as possible the prospective indexicals used by outsiders to call them to work, and an expanded perceptual environment for operating upon such indexicals. The gate monitors have been brought into the room at considerable expense precisely to help Ops workers formulate as quickly as possible their own sense of the "troubles" and other relevant activities occurring at distant locations.

The indexicality of the term "problem" is thus more complicated than was originally indicated. It is not only the case that the sense of "problem" appropriate to this particular occasion has to be determined through subsequent interaction. More crucially the resources that will be used to make that determination are themselves indexical in the sense that different settings, sequence types, activity structures, etc. will provide participants in those events with different ways of carrying out the discursive tasks posed by the occurrence of a prospective indexical and different shapes for what a solution to those tasks will consist of (cf. Heritage 1984b: 150). Moreover these differences are not accidental or optional; someone in the Ops room who ignores the gate monitors when they are relevant to a task she is engaged in will be held accountable for incompetent work.

The way in which distributed work groups can encompass asymmetrical perceptual environments is particularly relevant here. Gate monitors are found only in the Ops room. They do not exist in caller's environment. Let us assume for the moment that Gate is not taking into account the way in which inhabitants of the Ops room will use the gate monitors to make sense out of his talk. In such a case recipients bring to bear on his talk resources that the

speaker is completely unaware of. In the data being examined here they do in fact come to a very different understanding of the problem than the one he reports, e.g. the canopy over the cockpit windows visible on the gate monitor rather than the ground power unit. Workers in the Ops room thus understand the problem he reports in ways that fall outside of his perceptual horizon. Rather than simply seeking to recover mental states of the speaker, his recipients use the tools provided by their environment to come to their own understanding of his talk.

Linguists have treated the relationship between speaker and hearer as profoundly asymmetrical, with a very active speaker complemented by a very passive hearer. Thus, according to Saussure (1959: 13)

everything that goes from the associative center of the speaker to the ear of the listener is active, and everything that goes from the ear of the listener to his associative center is passive.

In the present data making sense out of the talk in progress is very much a distributed, collaborative process, one that encompasses not only the speaker's original talk but also very active operations on that talk by its hearers. Indeed the Ops room, as a cultural community encompassing competent members, systematic tasks, and relevant tools, has been built precisely to make such operations possible on calls reporting the troubles that it is designed to deal with.

Members of the Ops room use the gate monitors to elaborate and make sense out of what they hear. However, that talk simultaneously provides a set of instructions, an interpretative framework, for looking at those monitors that will heavily influence what will be seen in their images, e.g. they are primed to search for a "problem":
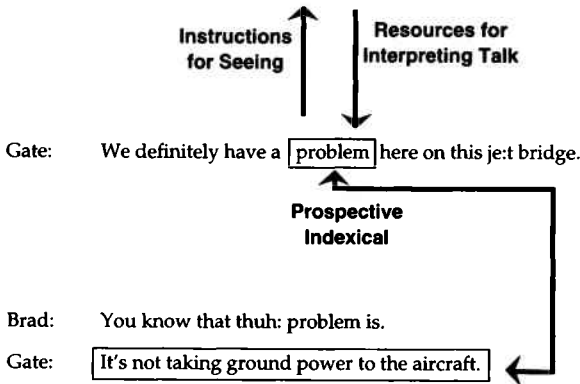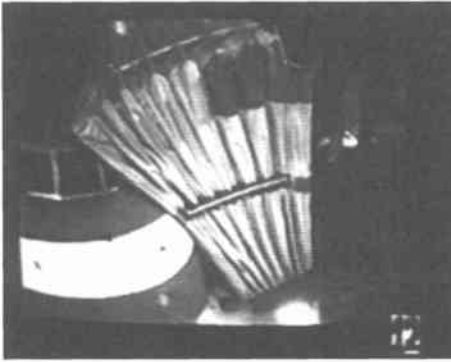
Figure 8.11 Mutual shaping of the prospective indexical and the event it interprets

A two-way bridge has been built between (1) the tools being used, the images on the monitors that allow those in the Ops Room to gaze into the area that has become the current object of their concern, and (2) the language through which that object, the "problem" becomes visible to them and is articulated. Objects on both sides of the bridge change once it is built. As the images visible on the screen are used to elaborate the prospective indexical it achieves a more definite sense and begins to be shaped into a more definite and coherent object, while simultaneously what is seen in those images is structured by the talk which has generated the task of looking in the first place, i.e. a search for trouble.[7]

In looking at their monitors workers in the Ops Room are not acting as neutral, disinterested observers. The phenomenology of

their perception is not lodged within an isolated consciousness, but instead emerges from a set of historically constituted discursive practices that are shaped by (1) the tasks they are engaged in, tasks which provide the charter for their community, the *raison d'être* for the existence of the Ops Room, i.e. finding the problem that it is their job to resolve;[8] and (2) the structure of language as deployed within human interaction, e.g. the cognitive, perceptual and interactive processes unleashed by the occurrence of a work relevant prospective indexical in talk.

The sense that a visible problem can clearly be found somewhere in the array of images on the gate monitors is intensified by other features of the talk. Gate opens his report, not with "I" (e.g. "I've got a problem here"), a description that would not suggest that the addressee as well as speaker might have access to the problem, but instead with "We," a term that presupposes not individual but organizational responsibility for finding a solution to the problem. Those in the Ops Room are, from the very beginning of his sentence, aligned to the trouble he is reporting, not as spectators, but as part of the work crew responsible for solving it. This is followed by a very strong evidential: "*def*initely." Such a formulation leaves no room for doubt about the existence of consequential trouble.[9] The gates are to be inspected, not to see if there might be trouble, but to find the problem that is unambiguously there. Thus as Ops Workers move their gaze to the monitors they are primed to search for events of a particular type.

8.5 Extracting the image

Initially the inhabitants of the Ops Room are unable to find the trouble on their gate monitors. Just after the completion of Gate's talk Julie scans the monitor array but then immediately turns back to some papers she is working on. Neither she, nor anyone else in the room, displays any recognition of what might be the problem. It might be argued that this is quite simply explained by the fact that there is indeed no problem with any of the jet bridges visible on the monitors. However, in view of the way in which the whole room breaks into spontaneous laughter at what they see on these screens only a few seconds later, laughter which is initiated by Julie, the very party who has just found nothing interesting in the array, such

an explanation adds very little to our understanding of what is happening here.

The monitor array contains views of eleven different gates. Finding the particular event of interest within such a complex visual field, especially when scenes encompassing complex webs of technology and activity have been reduced to comparatively small, flat, two-dimensional surfaces, can be a daunting task. In his analysis of the prospective work being done by story prefaces Sacks (1974) noted the importance of having a particular place to apply an interpretative template. In the present data, though Gate provides a clear prospective indexical, one that is enhanced by a strong evidential, his description of the place where the trouble exists ("a problem here on this je:t bridge") makes use of indexicals (e.g. "here", "this") that assume, quite wrongly, that his addressees already have access to that place. Each monitor is labeled with a gate number. In line 8 Jay prompts Brad to ask for the number of the gate where the trouble is to be found. The answer to Brad's request "A: twelve" specifies a particular place within the gate array upon which to focus the search for trouble.[10]

Julie attends to Brad's request as an action that will provide precisely this kind of information. In the slot where Gate's answer will occur, but before he has actually started to speak, she returns her gaze to the monitor array. Shortly after hearing the gate number Brad and Julie shift their gaze to the left side of the array where the monitor for gate 12 is positioned. Only when Brad has found gate 12 in the monitor array does he ask Gate if he knows what the problem is. Gate's description of the problem is thus not produced until Brad is in a position to scan independently the image of that scene that is available to those in the Ops room.

8.6 Formulating the problem

Almost immediately after finding the relevant place in the array (i.e. just after her head stops moving), and before Gate has had an opportunity to describe the problem, Julie produces the following reaction to what she sees there:

15   Julie: Uhoo: : : eh : : :

16   It's covering half of the ai(h)rpl(h)ane.

This is the place where the trouble with the jet bridge suddenly becomes transparently visible to those in the Ops room. Moreover it is the talk that touches off the laughter which quickly fills the room. It is therefore relevant to look in more detail at how it does this work.

Julie's action is organized in terms of a format that is used quite extensively to package experience in talk:
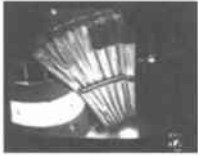
Uhooo: : : eh : : :   It's covering half of the ai(h)rpl(h)ane.

[Triggering Event]   + [Reactive   +   [Elaborating Sentence]
                          Particle(s)]

Figure 8.12 A format for reacting

Here are some more examples. For clarity the triggering event is not included. However the relevant existence of such an event can be clearly seen in the backwards referencing pro term that begins each sentence:

	Particle(s)	Sentence
Clacia:	Oo my God	He wz such a pain,
Nancy:	Ga : h	that's goo:d
Clacia:	Oh : God	that'd be fantastic
Debbie:	Oh : :	She was so nice
Paul:	Oh :	It was beautiful.
Dianne:	Oh : : God	It wz r'lly funny.

Ignoring for the moment the particles and focusing on the sentences in this data set it can be observed that they all have a common underlying form:

Pro Term + Copula + (Intensifier) + Assessment Adjective

Sentences with this structure provide prototypical examples of what Lyons (1972: 471) has identified as *ascriptive sentences* which "are used characteristically... to ascribe to the referent of the subject-

expression a certain property." Julie's utterance is slightly more complicated in that it contains not just a single assessment adjective but a more elaborate description. However, like the assessments her description includes an evaluation of the entity being commented upon (for example the laughter that occurs within it as well as other features of its intonation which are difficult to reproduce on the printed page). The structure of ascriptive sentences provides an economical but very powerful way of formulating for others how entities of many different kinds – objects, scenes, events, other people, etc. – should be interpreted. Thus the semantic structure of the second part of the sentence explicitly characterizes that entity in a specific way, one that proposes how it is to be perceived and understood (e.g. the choice of any term not only excludes but contrasts with other possible formulations). Moreover in many cases this semantic description is overlaid with an evaluative and frequently an affective dimension. Unlike "neutral" "scientific" descriptions which attempt to efface the persona of the author and achieve a disembodied objectivity, statements built with these affective and evaluative components depict an actor who commits herself to a position about the entity being commented upon.[11] Describing something as "beautiful," "ugly," "a pain," "funny" etc. requires an actor who experiences and evaluates what is being talked about, and in so doing visibly takes up a stance toward it. Consistent with Goffman's (1979) analysis of *footing*, the structures used to build these formulations provide laminated views of the entities they constitute, encompassing a referent, i.e. some entity that is being described, a semantic formulation of that entity, and the displayed alignment of an actor toward these events, quite frequently an alignment that is heavily charged affectively. Of particular importance to the general power of this structure is the pro term which begins the sentence. That term can make reference to, and thus incorporate into the talk of the moment with its attendant process of shaping, constituting and evaluating phenomena, an extraordinary range of different kinds of entities, people, actions, events, long strips of other talk,[12] etc. In the present data Julie uses the pro term that begins her sentence to incorporate into the world of her utterance the image on the screen, formulates what that image contains by using the syntactic and semantic components of her linguistic system, comments on the import of an event constituted in this way

through her intonation and by embedding laughter in the midst of her description, and in so doing actively takes up a stance toward these events, a position about what the image reveals and how it should be treated (i.e. what can be seen there is something to be laughed at). Finally by laughing at what she sees here she marks it as outside the bounds of what is acceptable for an event of this type and thus attends to, and helps formulate (for example through her description of what is wrong in the image), what counts as "normal" in the working environment of this community.

8.7 Response cries

Initially, the particles in this data collection might seem far less interesting than the ascriptive sentences that follow them. Thus quite frequently the talk before the ascriptive sentence consists of a single nonlexical sound (Julie's "Uhoo: : : eh : : : " for example). What lexical components are found are drawn from a very narrow subset of the lexicon, essentially expletives. The effect of all this is that the prefaces are not only brief, but also quite simple in structure. The semantic resources used in the sentences that follow them to shape and characterize the referent being commented upon are completely absent. Indeed these particles are instances of what Goffman (1981) has analyzed as *response cries*, bits of speech that "externalize a presumed inner state" (Goffman, 1981: 89, see also 116).

I want to explore the possibility that instead of constituting actions that are best investigated within an analytic framework that focuses exclusively on the individual and her psychology, the response cries that occur in these data are also organized as social phenomena that provide very powerful resources for shaping the perception and action of others. We can begin by noting that participants themselves frequently portray response cries in a way that is entirely consistent with Goffman's characterization of them. Particularly clear examples are found in reported speech. Rather than describing a character *speaking* a response cry, storytellers frequently report them *thinking* it. In both of the following examples (A and B) the response cry "Oh Christ" is preceded by the mental verb (Quirk, Greenbaum, and Svartik, 1985) "thought":[13]

Example A

Tasha: She said <u>oh</u> yeah.

            *hhh <u>Ka</u>ren usetuh date a guy named Prosser Mellon.

            $\left(\begin{array}{l}\text{Is that} \\ \text{He's at}\end{array}\right)$ the same bank that Ron works for.

→   en I thought <u>Oh : : Christ.</u>

            <u>Pro</u>sser Mellon yer kindding.

Example B

Tasha: A:n I <u>h</u>ad- (0.3) said

            Dju wanna go up t'the club- (0.2)

            there's a <u>lu</u>au up there

            en I said, (0.2) yeah okay en,

            (seh) we'll go up fer, drinks'n'<u>di</u>nner

            En I said well I'm sorry

            I have a date at nine o'clo:ck (0.7)

→   An 'e thought oh Chri:st

            y'know yer really n(h)<u>eat</u>!

These response cries should not however be analyzed in isolation. Both of them, as well as all of the other examples we have been looking at, occur in a particular environment: after some triggering event but before the sentence that comments on that event:

[Triggering Event] +[Response Cry]+[Elaborating Sentence]

The way in which the response cry is built to display a particular type of reaction to that event is well illustrated by the frequent occurrence within them of the particle "oh" which Heritage (1984a) analyzes as a change of state token. Moreover, in that response cries lack the syntactic anaphoric machinery of the sentences that follow them, the way in which they indicate what they are responding to is through adjacent positioning and immediate juxtaposition. The occurrence of the response cry thus locates (or at least notes the existence of) some other event and formulates it in a particular way, i.e. as something that has the power to elicit the strong reaction visible in the cry. In brief, the format being investigated here depicts a small activity structure, the unfolding of a single coherent course of action: an event, followed by the reaction

to it of someone who has experienced that event, followed by a sentence that explicates the reaction that prefaced it.

Though lacking the descriptive power of the sentences that follow them, response cries have resources of their own for shaping, characterizing, and formulating events. Of particular importance to this process is the sudden, immediate and spontaneous character of the actor's reaction to the triggering event. Goffman argues that response cries reveal "something that has escaped control" (Goffman 1981: 98), "a flooding up of previously contained feeling, a bursting of normal restraints." This spontaneity is frequently enhanced by affective loading of various types (for example through intonation). The power and spontaneity of responses with such characteristics portray the reaction they make visible as in some sense "natural" and unpremeditated, i.e. the triggering event is so obvious and powerful that it leads to an involuntary flooding out that can only later be explained through an explicit statement. Nuckolls (1991) notes that

High degree of speaker involvement ... has been cited as evidence of an inability to speak analytically and impersonally, and also of a prevailing attitude which reacts to, rather than "knows" the world.

In opposition to such a view, we find here that it is precisely the reaction, the response cry with its affective loading, that establishes the unproblematic existence of an event, and sets parameters for how it should be known (e.g. both as something whose existence is unproblematic, obvious and taken for granted, and as something to be analyzed and responded to in a specific way).

8.8 Perception, intersubjectivity, and participation

From this perspective the spontaneity of Julie's "Uhoo: : : eh : : : " and the affective loading it carries which hints at the laughter that is about to emerge constitute very powerful structures for shaping how others in the room will make sense out of what is visible on the monitor screen. If the "problem" which the affect in her intonation now locates as found is so clear and vivid that she floods out as soon as she sees it, any one else who is competent to evaluate such a scene should also be able to find it. Moreover they can display when they have found it by providing a reciprocal display of their own, for example by laughing. Indeed, as Sacks (1974) notes, laughing as

soon as a punchline in a story can be recognized frequently becomes a test; parties who are noticeably slow to laugh show themselves to not have gotten the point of the joke, to be dense, etc. Julie's response cry, precisely because of the way in which it presupposes the clear visibility of the trouble and loads that proposal with strong spontaneous affect displays, can exert powerful pressure on others in the room to also find the trouble as quickly as possible. Before Julie has finished her sentence Jay is also laughing:

90.10.26 9:01pm

Julie:	Uhoo: : : eh : : :	14
Julie:	It's covering ha ⌈lf of the │ *ai*(h)*r*pl(h)ane. │	15
Jay:	└Eh Heh Huh huh huh huh│	16

Figure 8.13 Collaborative laughter

In view of the way in which Julie's first laugh token occurs only after Jay has started to laugh one might be tempted to say that Julie is responding to Jay's laughter. The situation is however more complicated than this. With her earlier response cry in line 14 Julie proposed a way of both seeing the image on the screen, and of aligning to it, that Jay's subsequent laughter may itself be responsive to. Having seeded the ground for such alignment possibilities she now escalates her own participation once someone else joins her (c.f. M. H. Goodwin's 1980 analysis of mutual monitoring). Consistent with Jefferson's (1979, 1984b, 1987) work on laughter what one finds here is an intricate, step wise building up of a collaborative laughing together.

Once this laughter becomes a socially distributed speech activity the social status of the events it is formulating is radically transformed. The mutual laughter displays a multi-party consensus about how the image on the screen should be interpreted. In that independent observers can come to the same conclusion about the sense and import of what they see there the factual status of that interpretation, the sense that it "really" exists "out there" instead of being a single individual's idiosyncratic misapprehension, is massively enhanced. In laying the foundations of modern science Robert Boyle "insisted that witnessing was to be a collective act. In natural philosophy, as in criminal law, the reliability of testimony depended upon its multiplicity" (Shapin and Schaffer, 1985: 56). According to Boyle (Shapin and Schaffer, 1985: 56):

For though the testimony of a single witness shall not suffice to prove the accused party guilty of murder; yet the testimony of two witnesses, though but of equal credit... shall ordinarily suffice to prove a man guilty; because it is thought reasonable to suppose, that, though each testimony single be but probable, yet a concurrence of such probabilities (which ought in reason to be attributed to the truth of what they jointly tend to prove) may well amount to a moral certainty.

As concerned as Boyle and his colleagues with the discursive structures through which "truth" can be enforced within a community are the eleven-year-old African American girls involved in a He-Said-She-Said dispute described by M. H. Goodwin (1990: 202):

Ruby: It's between Kerry, and you, (1.0)

> See *two* (0.5) two against one. (0.7)
> Who wins? The one is two.=Right? (0.5)

And that's Joycie and Kerry. (0.5)

> They both say that you said it.
> And you say that you didn't say it
> Who you got the *proof*

that you *didn't* say it

Figure 8.14 Multi-party consensus

When Jay and Julie laugh together at the image in front of them a multi-party consensus about how that image should be perceived and interpreted is publicly displayed to the others in the room. The power of this consensus resides not only, or even primarily, in the proposition explicitly stated (e.g. "It's covering half of the airplane"), but rather in the interactive organization of the participation framework through which this shared vision is constituted. Of particular importance to the cognitive organization of this process are its affective components which constitute the vision as something so solid and obvious that actors encountering it will spontaneously burst into laughter (and indeed others in the room do now begin to laugh). It is here that transparent vision, i.e. the ability to spontaneously find an event of a particular type in the pixels on the screen, is constituted. This transparency emerges as the product of interactive process, within which scenes and the proper alignment of actors to them are built through discourse.

8.9 Conclusion

What can be seen on the monitor screen is situated within a dense web of discursive practices, beginning with the organization of the Ops room itself as an entity charged with certain kinds of work, and proceeding to the prospective indexicals that announce the problem and structure initial vision of the screen, the participation frameworks that build socially distributed, shared perception and cognition, etc. The products of this work build events that are situated, context dependent (the gate monitors used in this particular work setting can shape perception of the talk being heard as much as the talk-in-interaction informs perception of the screen), and intensely local. However in building these local events participants make use of far more general interactive procedures (story formats, prospective indexicals, affect displays, etc.) that operate in other settings as well (cf. Schegloff, 1972). The study of discourse is not a minor subfield of the human sciences, but rather a key locus for the analysis of the discursive practices, cognitive operations and social phenomena through which human beings constitute together the endogenous worlds that they inhabit.

From such a perspective it is possible to view perception, not as something located within the psychology of the individual, or within a Cartesian mind isolated from the world that it inhabits, but instead as a thoroughly social phenomenon intrinsically tied to action in the world. In these data something in the working environment of this community, a representation of events at a distant work site on a television screen, is understood and shaped into a work-relevant perceptual event, by using a second representational system: language as deployed and constituted through talk in interaction.

The ability of language to shape a group's perceptions of the world it inhabits is central to the Sapir-Whorf hypothesis. Sapir and Whorf focused their inquiry on one order of linguistic phenomena: language-specific grammatical and semantic systems, and indeed in these data the grammar of the talk in progress, for example the structure of prospective indexicals, is essential to the organization of the interactive work that participants in this setting are pursuing. However the organization of language at the level of discourse as a systematic phenomenon in its own terms seems to

have been completely invisible to Whorf. Nonetheless when we look at what Whorf considered to be the central issue for the questions he was addressing we find that it is the process of reaching agreement:

...the background phenomena with which [linguistics] deals are involved in all our foreground activities of talking and of reaching agreement, in all reasoning and arguing of cases, in all law, arbitration, conciliation, contracts, treaties, public opinion, weighing of scientific theories, formulation of scientific results. Whenever agreement or assent is arrived at in human affairs, and whether or not mathematics or other specialized symbolisms are made part of the procedure, THIS AGREEMENT IS REACHED BY LINGUISTIC PROCESSES, OR ELSE IT IS NOT REACHED. (Whorf 1968: 44.

The processes that Whorf describes, agreement being the prototypical case, not only have discourse level components, but are, it can be argued, intrinsically processes constituted through discourse (e.g. arguing of cases, law, conciliation, what is now known about the organization of scientific practices, etc.). Agreement is not something *known* in an individual brain[14] but something *done* in collaboration with others. It is not a static state of knowledge but instead an interactive process that stretches across differentiated parties within a distributed field of action. The very existence of an agreement requires the coparticipation of others. As such its natural home is human discourse. From such a perspective the processes of discourse through which human beings accomplish common, situated understanding with each other, are central to the analysis of the questions raised by Whorf.

More generally to investigate the interactive organization of knowledge we need access not only to the cognitive artifacts sedimented within Saussure's *langue* but a much larger field of action encompassing the activities that constitute the life world of endogenous communities, the tools used to carry out those activities, the actual bodies of participants positioned so as to afford particular kinds of access to each other and the events they are collaboratively engaged in. Within such a framework participants use talk to not only state propositions but also comment affectively on their alignment to those propositions, while pursuing further delineation of the truthfulness of these statements through a discursive process of

interaction, situated within settings inhabited not only by other human beings but also artifacts implicated in the cognitive activities in progress. Despite this wider frame of reference the detailed organization of language and grammar, as articulated through talk-in-interaction, lies at the heart of this process, providing primary structures for interpretation and the organization of action, indeed a syntax for building not only sentences but social action and intersubjectivity.

Notes

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   An earlier version of this paper was presented at the 90th annual meeting of the American Anthropological Association, Chicago, November 20–24, 1991, and at the Annual Meeting of The American Association for Applied Linguistics, Seattle, February 29, 1992, and at the Interaction and Grammar Workshop, UCLA, May 1, 1992.
1 The system developed by Gail Jefferson (Sacks, Schegloff, and Jefferson, 1974: 731–33) is used to transcribe talk. Relevant transcript symbols are described in the glossary. In addition subsections of a larger transcript have sometimes been highlighted by drawing boxes around the appropriate text.
2 The present analysis emerges from the Workplace Project initiated by Lucy Suchman at Xerox's Palo Alto Research Center. The project investigated how work was organized in multi-activity settings at a medium sized airport.
3 See Suchman (1992) for more detailed analysis of centers of coordination as situated, interactively constituted phenomena.
4 For more extensive analysis of how this object changes over time see Goodwin and Goodwin (in press).
5 See Goodwin (1986) for analysis of how a story with two competing characterizations of the events about to be told in two separate prefaces leads to conflicting interpretations of both the events in the story, and the structure of the story, e.g. when its climax can be seen to occur such that it is appropriate for recipients to start responding to it.
6 See Ochs, Taylor et al. (1989, 1992) for other analysis of how interactive narrative structures are relevant to the organization of scientific discourse.
7 Such interpretive structures provide powerful tools with strong political consequences in situations of contested vision. See Goodwin (1994) for analysis of how language was used by lawyers for the police who

beat Rodney King to shape the jury's perception of events visible on the tape of the beating.

8   Such a position is of course quite consistent with Heidegger's arguments that the primacy traditionally given disinterested knowledge must be overturned and replaced by an emphasis on actual work in socially constructed, contingent environments. Ops Workers' knowledge of what their screens have to offer them arises from situated, active, practical manipulation of "tools that already have a meaning in a world that is organized in terms of purposes" (Dreyfus, 1991: 47).

9   As an epistemic upgrade the phrase "We definitely have ..." might suggest prior interaction about this matter, e.g. that Gate has been assigned to check out a possible problem (I am indebted to Emanuel Schegloff for bringing this to my attention). While a preliminary search of our recordings has failed to locate such an exchange, this does constitute one possible way that this talk might be heard.

10 The request to specify the gate is relevant to more than finding a particular scene on the gate monitors. For example, if the Ops room is to dispatch a repair crew they have to know where to send that crew. Whalen (1995) describes in detail how workers in a 911 operations room "take control" of the reports of people who call them, intercepting what callers might take to be the interesting aspects of what they have to say, in order to collect as quickly as possible the information required by the report forms that structure work in the 911 center.

11 For analysis of the interactive organization of affect see Goodwin and Goodwin 1987a; Ochs, 1986, and Schieffelin, 1983, 1986, 1990.

12 One of the characteristic environments for such utterances is after stories and other extended descriptions where they are used to help formulate the gist of the preceding talk.

13 By using such mental verbs in these narratives the speaker is able to report both (1) a specific event, and (2) the unspoken assessment of that event by a relevant actor, e.g. to construct a multi-layered description that encompasses both a report of something that was said, and other participants' analysis of, and stance toward, that reported speech. See Capps and Ochs (1995) for extensive analysis of how mental verbs "illustrate the grammatical face of consciousness" by enabling a speaker constructing a narrative not only to report past thoughts, but also to focus on absorption in the activity of thinking and feeling as a process in its own right.

14 Even if others happen to know the same things, e.g. Saussure's notion of a shared storehouse which seems to form the basis for Whorf's notion (1968:45) of agreement being "codified in the patterns of our language."

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