

Discourse Analysis, Learning, and Social Practice: A Methodological Study



James Paul Gee; Judith L. Green

Review of Research in Education, Vol. 23 (1998), 119-169.

Stable URL:

<http://links.jstor.org/sici?sici=0091-732X%281998%2923%3C119%3ADALASP%3E2.0.CO%3B2-4>

Review of Research in Education is currently published by American Educational Research Association.

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/about/terms.html>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/journals/aera.html>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is an independent not-for-profit organization dedicated to creating and preserving a digital archive of scholarly journals. For more information regarding JSTOR, please contact support@jstor.org.

Chapter 4

Discourse Analysis, Learning, and Social Practice: A Methodological Study

JAMES PAUL GEE

Department of Curriculum and Instruction, University of Wisconsin-Madison

JUDITH L. GREEN

University of California, Santa Barbara¹

In the past two decades, the study of discourse has become an important theoretical perspective for those concerned with the study of learning in social settings. Discourse analysis approaches have been developed to examine ways in which knowledge is socially constructed in classrooms and other educational settings. By studying discursive activity within classrooms and other social settings, researchers have provided new insights into the complex and dynamic relationships among discourse, social practices, and learning. Specifically, this body of work has provided understandings of the ways in which opportunities for learning are constructed across time, groups, and events; how knowledge constructed in classrooms (and other educational settings) shapes, and is shaped by, the discursive activity and social practices of members; patterns of practice simultaneously support and constrain access to the academic content of the “official” curriculum; and how opportunities for learning are influenced by the actions of actors beyond classroom settings (e.g., school districts, book publishers, curriculum developers, legislators, and community members) (for recent syntheses and conceptual analyses, see Hicks, 1995; Luke, 1995).

Discourse analysis approaches used to examine such educational issues draw on discourse theories and methods developed in other disciplines (e.g., applied linguistics, law, literary studies, psychology, sociolinguistics, and sociology, among others) (see van Dijk, 1985, for a comprehensive look at the issue of discourse theory and method across disciplines, including education). However, educational researchers have not merely taken up and applied existing approaches. They have also contributed to the development of discourse theories and methods as they have adopted and adapted existing approaches and constructed new approaches to address questions of importance to education as a discipline.²

Given the complex and continuing nature of life in classrooms and other educational settings, educational researchers often combine discourse analysis with ethnographic approaches to examine questions of what counts as learning in a local setting, how and when learning occurs, and how what is learned at one point in time becomes a sociocultural resource for future learning for both the group and the individual. Through this combined approach, educational researchers are able to examine how educational processes and practices are constructed across time by

members of the classroom; how students take up, resist, or fail to learn academic content through these processes and practices; and how discourse processes and practices shape what counts as knowing, doing, and being within and across events in classrooms and other educational settings (e.g., staff rooms, psychoeducational diagnostic team meetings, parent-teacher conferences, and testing situations).³

One way to understand the value of the approaches that combine discourse analysis with ethnography is that each represents a *logic-of-inquiry*, or what Birdwhistell (1977) calls a *logic-in-use*. This logic-of-inquiry influences the ways in which learning can be studied in social settings, the questions that can be asked, the research decisions and procedures used, and the ways of reporting and representing findings. Our goal in this chapter is to propose a conceptual framework for constructing a logic-of-inquiry for studying learning in social settings that uses different forms of discourse analyses guided by an ethnographic perspective in theoretically coherent ways.⁴ The discussion of the framework and its application is presented in three parts. In the first part, we describe the theoretical perspective on discourse and language underlying the proposed framework. In the second part, we illustrate how this framework can be used to study learning as a sociocultural activity in communities of practice. In the third part, we discuss issues of validity and implications for theory, research, and practice.

CONSTRUCTING A LOGIC-OF-INQUIRY: THEORY-METHOD RELATIONSHIPS

Concern for understanding why a theoretically grounded logic-of-inquiry is needed was articulated by Birdwhistell (1977) two decades ago: "The interdependence of theory and methodology can be hidden by exclusive focus upon either philosophy or technique. Once separated, only the most sophisticated can reconstitute them into investigatory practice" (p. 104). He was led to this conclusion by a review of the literature he undertook when his students asked whether Margaret Mead and Gregory Bateson had a methodology. Their question surprised, amazed, and challenged him, since he thought that he had made visible the importance of considering theory-method relationships guiding his and others' research.

This literature review also led him to conclude that, while this was a general trend across research perspectives, it was particularly true of a number of researchers from disciplines concerned with "what is termed 'direct observation'" (p. 104). He found that these researchers had a tendency to "reject the use of theory except as a device for the interpretation of data" (p. 104). In addition, his analysis led him to conclude that this was not a new tendency; rather, it was one that was ongoing:

I have come to the conclusion that the past twenty-five years have seen a separation of theory from methods of research procedure. This tendency becomes manifest in the choice and analysis of import of problem, in the location of observational site, in the preliminary isolation of data, in the development of relevant, consistent and explicit techniques of observation, in the recording and storage of data, in the orientation of rules of evidence, and, finally, in the methods of data and evidence assessment and presentation that permit and assist in ordering reexamination, and research. (pp. 104-105)

An analysis of the literature on observational research in education shows a parallel condition for those engaged in many forms of direct observational research

in education (Evertson & Green, 1986). Extending Birdwhistell's (1977) observations to this chapter, we argue that to create a coherent logic-of-inquiry, an understanding of the sociocultural nature of discourse, social practice, and learning is necessary. Without such understanding, researchers will not be able to engage with and use ethnographically grounded methods of discourse analysis in theoretically appropriate ways.

Our purpose in making visible the theory-method relationships grounding the proposed framework is twofold. First, we view this knowledge as critical, since each decision about method implicates the use of particular theories and the exclusion of others, and each decision about theory entails related decisions about method. Second, such knowledge is needed to understand what philosopher Kenneth Strike (1974) calls the expressive potential of a theoretical language. Strike argues that each research program has an expressive potential that places limits on what can be discussed and what phenomena can be described in and through that language. He also argues that the choice of language (theoretical orientation), with all of its related conventions for use, inscribes a particular view and set of understandings about the phenomena under study. From this perspective, then, there is the relationship of the language to the actions, problems, and processes of a researcher. Viewed in this way, a logic-of-inquiry is a way of working as a researcher, a theoretically coherent research approach, and a language of the research that has a particular expressive potential.

A THEORETICAL PERSPECTIVE ON DISCOURSE AND LANGUAGE

In this section, we present a theoretical orientation to language as a sociocultural practice and social resource of a group, and, in so doing, we demonstrate that discourse analysis entails more than writing talk down and reading the transcript. Specifically, we show that an ethnographically grounded approach to discourse analysis involves a particular perspective on discourse and social action through language that forms an orienting framework for research design and implementation (e.g., data collection cycles or processes) as well for data analysis, interpretation, and explanation.

The discussion is presented in four parts. In the first part, we present four key dimensions of language as social action and cultural resource that provide a foundation for our ethnographically grounded approach to discourse analysis: situated meanings, cultural models, reflexivity, and an ethnographic perspective. In the second part, we describe key elements for constructing a logic-of-inquiry. In the third part, we present an argument about how, through language, members engage in a range of construction processes within and across time and events: world building, activity building, identity building, and connection building. Finally, in the fourth section, we examine the concept of social languages and show how members of a social group, through oral and written texts, construct local or situated meanings, identities, and worlds that vary across situations or events.

Situated Meanings, Cultural Models, and Reflexivity

We begin the discussion of discourse and language by introducing two types of meaning that attach to words and phrases in actual use: situated meanings and cultural models. After a brief discussion of these two notions, we turn to a discussion of an important and related property of language-in-use, a property ethnomethodologists call *reflexivity*. Through these constructs, we examine language as social action with a focus on what members of a social group are accomplishing through their discourse, rather than focusing solely on language form or function.

Situated Meanings and Cultural Models

A situated meaning is an image or pattern that we (participants in an interaction) assemble "on the spot" as we communicate in a given context, based on our construal of that context and on our past experiences (Agar, 1994; Barsalou, 1991, 1992; A. Clark, 1993; H. H. Clark, 1996; Gee, 1996; Gumperz, 1982a; Hofstadter, 1997; Kress, 1985; Levinson, 1983; Wittgenstein, 1953). For example, consider the following two utterances: "The coffee spilled, get a mop" and "The coffee spilled, get a broom." In the first case, triggered by the word *mop* (a lexical cue), a hearer (or reader) may assemble the situated meaning as something like "dark liquid we drink" for "coffee," by using his or her experience in similar situations. In the second case, triggered by the word *broom* and personal experience in such matters, a hearer (or reader) may assemble a situated meaning as something like "grains that we make our coffee from" or "beans from which we grind coffee."

These contrasting cases provide a point of departure for the discussion of situated meaning. However, in a real context, there are many more signals as to how to go about assembling situated meanings for words and phrases. Gumperz (1982a) called such cues (or clues) *contextualization cues*. They include prosodic and nonverbal cues such as pitch, stress, intonation, pause, juncture, proxemics (distance between speakers, spatial organization of speakers), eye gaze, and kinesics (gesture, body movement, and physical activity), in addition to lexical items, grammatical structures, and visual dimensions of context. Such cues provide information to participants about the meaning of words and grammar and how to move back and forth between language and context (situations). For example, it is not possible to determine the meaning of the word *okay* without considering the way it was said and its context of use. Consider each of the following questions about the delivery of this lexical item: Was it said with a rising intonation after a person offered a suggestion (a way of asking for confirmation)? Was it said with great excitement (a way of given praise)? Was it said at the beginning of a message (a request for attention)? Or was it said slowly in between messages by a speaker (as a placeholder to the hearer that one is thinking and wants to maintain one's turn at talk) (Green & Harker, 1982)? These are not signals of fixed and decontextualized meanings; rather, they are clues that people draw on to construct and negotiate situated meanings within and across particular events (see Duranti & Goodwin, 1992, for a cross-disciplinary discussion of context and meaning construction).

From this perspective, situated meanings do not simply reside in individual minds;

very often, they are negotiated between people in and through social interaction (Billig, 1987; Edwards & Potter, 1992; Goffman, 1981; M. H. Goodwin, 1990; Gumperz, 1992). For example, if a partner in a relationship says something like "I think good relationships shouldn't take work," a good part of the ensuing conversation might involve mutually negotiating (directly, or indirectly through inferencing) what "work" is going to mean for the people concerned in this specific context as well as in the larger context of their ongoing relationship. Furthermore, as conversations—and, indeed, relationships—develop, participants often continually revise their situated meanings.

Words such as *work* and *coffee* seem, at a folk or commonsense level, to have more general meanings than are apparent in the sorts of situated meanings we have discussed so far. This is because words are also associated with "cultural models." Cultural models are "story lines," families of connected images (like a mental movie), or (informal) "theories" shared by people belonging to specific social or cultural groups (Cole, 1996; D'Andrade & Strauss, 1992; Geertz, 1983; Holland & Quinn, 1987; Spradley, 1980). Cultural models "explain," relative to the standards (norms) of a particular social group, why words have the range of situated meanings they do for members and shape members' ability to construct new ones. They also serve as resources that members of a group can use to guide their actions and interpretations in new situations.

Cultural models are usually not stored in any one person's head but are distributed across the different sorts of "expertise" and viewpoints found in a group (Hutchins, 1995; Shore, 1996), much like a plot of a group-constructed (oral or written) story in which different people have different bits of information, expertise, and interpretations that they use to contribute to the plot being negotiated. Through this process of joint construction of text, then, members construct local meanings that they draw on to mutually develop a "big picture." This process can be illustrated if we consider further the example of coffee. The cultural model connected to "coffee" is, for some of us (depending on our local opportunities), something like the following: Berries are picked (Somewhere? From some sort of plant?) and then prepared (How?) as beans or grain to be made later into a drink, as well as into flavorings (How?) for other foods. In addition, some of us may have experiences with drinking coffee in coffee bars or coffeehouses, experiences that extend the general model in particular ways: Different types of coffee, drunk in different ways, have different social and cultural implications (e.g., marking particular types of status). Furthermore, members who work in a coffee bar, or the processing plant, will have still other dimensions to add to the cultural model. In this way, members, through their experiences, expand their personal cultural repertoires for meaning construction related to "coffee" while simultaneously expanding the cultural model of the group (see Kantor, Green, Bradley, & Lin, 1992, and Fernie, Davies, Kantor, & McMurray, 1993, for a discussion of this process in relation to developing cultural repertoires for being a student in a classroom).

Viewed in this way, a cultural model is a group's construction that becomes a resource that an individual may call on to guide his or her actions. Furthermore, such models, constructed within a particular context, may link with others in com-

plex ways to create more complex models. These models become framing models that particular members or groups within a society draw on to guide their actions in particular domains of life (for a discussion of how this applies to research on classrooms as cultures, see Gee, 1992; Lin, 1993; and Santa Barbara Classroom Discourse Group, 1992).

To clarify this process further, we draw on a conceptualization of culture framed by cognitive anthropologists James Spradley and Charles Frake.⁵ We find that this definition of culture can be applied to—and is consonant with—our notion of cultural models. Spradley (1980) proposed viewing culture as a cognitive map that is constantly being redrawn to serve as a guide for acting and interpreting our experience. Drawing on Frake (1977), he argued that

culture is not simply a cognitive map that people acquire in whole or in part, more or less accurately, and then learn to read. People are not just map-readers; they are map-makers. People are cast out into imperfectly charted, continually revised sketch maps. Culture does not provide a cognitive map, but a set of principles for map making and navigation. Different cultures are like different schools of navigation designed to cope with different terrains and seas. (Frake, cited in Spradley, 1980, p. 9)

This perspective on culture, along with work in symbolic anthropology on local knowledge (Geertz, 1983), suggests that what we have called cultural models are not fixed but are open to modification, expansion, and revision by members as they interact across time and events. This perspective also suggests that cultural models (whether local or broader framing models) constitute a set of principles for actions in particular cultural domains and for particular cultural processes (e.g., coffee making and drinking, child rearing, being a student in a classroom).

The dynamic process involved in constructing a cultural model can be seen if we consider how notions of coffee have changed in the last decade. The coffee bar (e.g., Starbucks) is a recent cultural space and phenomenon within the U.S. context. Ten or more years ago, such coffee bars were exotic or did not exist in many regions of the United States (and other countries), even though coffeehouses were part of the 1960s culture for particular groups. As coffee bars have become more and more common, they have become taken-for-granted dimensions of life for increasing numbers of people within and across social groups. In addition, the language and action⁶ associated with such coffee establishments have become shared by larger segments of U.S. society, thus expanding the cultural model associated with “coffee.” This model can be understood as a linked network of local or situated cultural models consisting of principles of practice that help to guide the thinking, social practices, and communicative resources of particular sociocultural groups or subgroups within a society, as well as individuals within these groups (for a discussion of cultural models at a national level, see Del Rio & Alvarez, 1995; for a discussion of how opportunities are shaped and local models are negotiated, see Tuyay, Jennings, & Dixon, 1995).

To further illustrate the notion of a framing model and principles of practice, we consider a second, more socially complex and consequential example: the cultural model that some members of particular groups in the United States use in raising young children. This model, drawing on work by Harkness, Super, and Keefer

(1992), can be summarized as follows: Children are born dependent on their parents and later go through various stages during which they often engage in disruptive behaviors in pursuit of their growing desire for independence. This cultural model integrates sets of principles of practice for defining and shaping what counts as child, child rearing, stages, development, and independence, as well as other dimensions of this complex cultural process. These principles of practice also help parents take action with their children and explain their children's actions and development in terms of values that their group (or subgroup) holds (e.g., independence, in this case in contrast to collective accountability in other groups). As in the case of "coffee," these models are not fixed but are continually revised and developed (consciously and unconsciously) in interaction with others in the group, as well as through exposure to various books and other media (cultural artifacts) (for a discussion of how particular social groups view children differently, see Strauss, 1992, and Whiting & Whiting, 1959; for related discussion of differences in cultural perspectives of children's socialization and language acquisition, see Corsaro & Miller, 1992, and Ochs, 1983, respectively).

From this theoretical position, not all of the bits and pieces of cultural models or principles of practice are consciously in people's heads, and different bits and pieces are shared across different people and groups. Through interactions, members appropriate the bits and pieces available to them within a social group, and these bits and pieces often become part of people's taken-for-granted social practices. In this way, members construct—and, at times, reconstruct—cultural models socially significant to appropriate participation within their social group (for a discussion of communicative competence in relationship to appropriate participation, see Gumperz, 1986; Hymes, 1974). In addition, cultural models, and combinations of such models in framing models, need not be completely consistent or complete for an individual or for the social group. Rather, they are always subject to revision, modification, and reconstruction as needed by members of the group. Furthermore, depending on the opportunities of particular groups, individual members may have more or less access to and, therefore, knowledge of such models.⁷

This view of the situated nature of meaning and the constructed nature of cultural knowledge places particular demands on discourse analysts. The task of the discourse analyst is to construct representations of cultural models by studying people's actions across time and events. In closely observing the concerted actions among members, examining how and what members communicate, and interviewing members (see Briggs, 1986, and Mishler, 1986, for discussions of the constructed nature of interviews), the analyst asks questions about the patterns of practice that make visible what members need to know, produce, and interpret to participate in socially appropriate ways (Heath, 1982). By means of such questions, the analyst can examine, for example, what members construct together, what they hold each other accountable to, and how they view the actions of others. In this way, the analyst identifies the principles guiding members' practices within and across contexts as well as the types of worlds, identities, and actions they construct and display in and through their talk and actions.

What Is Meant by an Ethnographic Perspective

One way to approach the study of cultural models is through the use of an ethnographic perspective to guide a discourse analysis. While this approach is not the same as doing ethnography, Green and Bloome (1983, 1997) argue that the cultural perspective guiding ethnography can be productively used in discourse studies (hence the term *ethnographic perspective*). One way to assess how discourse and ethnographic perspectives are conceptually related is through the definition of the phenomenon of study in ethnography by Spindler and Spindler (1987):

Within any social setting, and any social scene within a setting, whether great or small, social actors are carrying on a culturally constructed dialogue. This dialogue is expressed in behavior, words, symbols, and in the application of cultural knowledge to make instrumental activities and social situations *work* for one. We learn the dialogue as children, and continue learning it all of our lives, as our circumstances change. This is the phenomenon we study as ethnographers—the dialogue of action and interaction. (p. 2)

In summarizing the goals and purpose of ethnography in this way, they place the study of “dialogue” in the center of the work, whether that dialogue be through discourse or through action. Discourse analysis, then, when guided by an ethnographic perspective, forms a basis for identifying what members of a social group (e.g., a classroom or other educational setting) need to know, produce, predict, interpret, and evaluate in a given setting or social group to participate appropriately (Heath, 1982) and, through that participation, learn (i.e., acquire and construct the cultural knowledge of the group). Thus, an ethnographic perspective provides a conceptual approach for analyzing discourse data (oral or written) from an emic (insider’s) perspective and for examining how discourse shapes both what is available to be learned and what is, in fact, learned.⁸

Two key tasks facing ethnographers are central to understanding an ethnographic perspective on discourse analysis: exploration of part-whole, whole-part relationships and the use of contrastive relevance. According to Erickson (1979), “One goal...of the ethnographer is to arrive at a holistic understanding of the overall historical, cultural, or social context, whether that whole be an entire society or the beginning of a single lesson” (p. 1). Thus, he argues that the size of the “bit of life” being examined does not matter. What matters is how one approaches the analysis. Hymes (1977) described the second task as one of contrastive relevance. By using a contrastive analysis approach, the ethnographer is able to demonstrate the functional relevance of the “bit of life, or language and actions within that bit” (p. 92). This approach provides a way of demonstrating

that a particular choice counts as a difference within the frame of reference...to discover what meaning and choices of meaning lead to changes in form. One works back and forth between form and meaning in practice to discover the individual devices and codes of which they are a part. (p. 92)

Contrast can occur at any level of analysis; the size of the unit does not matter. The key is to show the relevance of this contrast in understanding what members are doing together. An ethnographic perspective, then, involves analyzing the choices of words and actions that members of a group use to engage with each other within

and across time, actions, and activity. Having described briefly what we mean by an ethnographic perspective, we now turn to a discussion of the framework we have developed for constructing an ethnographically grounded discourse analysis, or a logic-of-inquiry.

Reflexivity: Perspectives on the Joint Construction of Social Action

In this section, we examine an important property of language, reflexivity, and its implication for studying learning as social activity. By “reflexivity” we mean the way in which language always takes on a specific meaning from the actual context in which it is used, while, simultaneously, helping to construct what we take that context to mean and be in the first place. We will discuss several different perspectives on reflexivity below to create a broader perspective on how language gives meaning to and gets meaning from social activity. The different perspectives we discuss are clearly related, though they constitute somewhat different lenses through which to investigate language and social activity. As part of our discussion, we examine the implications of these perspectives for creating a conceptually coherent logic-of-inquiry for the study of learning in social settings.

We begin with a discussion of reflexivity, as defined by Mehan (1979) from an ethnomethodological perspective, that focuses on how members structure (organize) conversational and social activity.⁹ We then consider perspectives that focus on the negotiated nature of action, activity, content (text), and context. Constructs to be considered include the distinction between language and speech, speaker-hearer relationships, contexts as socially constructed, and intertextuality and intercontextuality as interactionally accomplished and socially significant. Each perspective argues for the need to consider sequences of connected talk and action, not simply individual utterances such as those provided in the coffee examples. This discussion is meant to be illustrative and not comprehensive, given the extensive body of work that exists across disciplines.

Ethnomethodology and reflexivity. To illustrate the ways in which ethnomethodologists view reflexivity, we consider two examples, one we describe and one from Mehan’s (1979) research on social organization in the classroom. We begin by considering how this perspective on reflexivity helps to explain the following brief interaction between colleagues observed in an office corridor: Speaker 1: “How are ya?” Speaker 2: “Fine.” Mehan (1979) describes how the relationship between these two utterances can be conceptualized.

In extended sequences...co-occurrence relationships bind initiation and reply acts... The co-occurrence relationships within these interactional sequences are “reflexively” established (Garfinkel, 1967; Garfinkel & Sacks, 1970). Given the first part of a sequence (an initiation act or an initiation-reply pair), the second part of the sequence is conditionally relevant (Schegloff, 1968). That is, the appearance of the first part of a sequence makes the appearance of a second part prospectively possible. The actual appearance of the second part of the sequence gives meaning to the first part of the sequence... Thus individual acts of speech are not autonomous. The meaning of a given speech act is not contained within its internal structure. Instead, meaning resides in the reflexive assembly of initiation, reply, and evaluation acts into interactional sequences. (p. 102)

From this perspective, the first utterance is understood to be an initiation in the form of a question that is followed by an appropriate (expected) type of response. Using the notion of co-occurrence relationship described by Mehan, we can see that the initiating act, a question, placed a social obligation on the hearer to respond; that is, it required cooperative completion of an activity by the participant to whom the question was directed to complete the conversational symmetry of this exchange sequence.

Although this discourse sequence is brief (it consists of only two utterances or two turn exchanges), it illustrates succinctly how reflexivity works as a means of structuring the activity between these speakers. If we now consider a more extended sequence from Mehan's (1979) research, we can obtain an expanded picture of how he used this approach to examine longer sequences in order to identify ways that members organize school structures through language-in-use. In his book *Learning Lessons: Social Organization in the Classroom*, Mehan presents an analysis of how

classroom turn-taking rules, like other normative rules, are tacit (Cicourel, 1973; Garfinkel, 1967). They are seldom formulated, listed, or stated in so many words. When interviewed, participants provide only idealized versions of procedures. The rules for normal operation can be made visible, however, by specifying the conditions that constitute their violation. Rule violations, in turn, can be located by looking for action that participants take in the absence of the expected forms of interaction. (p. 102)

One of the central findings of Mehan's study was the identification of the three-part initiation-response-evaluation act structure cited previously. One area of analysis using this "machinery" (Mehan's term) as an analytic tool was that of the turn-allocation apparatus of classroom lessons. Through this analysis, Mehan identified three techniques for turn allocation: individual nominations, invitations to bid, and invitations to reply. The following is an example of an individual nomination technique:

INITIATION	RESPONSE	EVALUATION
3:15 T: Now, what can you think, can you think of something to eat?	Many: Snakes Many: (raise hands) Snakes.	T: Wait a minute, wait a minute T: Wait a minute, raise your hand. Raise your hand. Give people a chance to think

In this example, Mehan argues that the "evaluative activity marks the absence of the expected form of interaction" (p. 102). From an ethnomethodological perspective, the evaluative activity portion of the structure was obligatory given that

the students violated the co-occurrence relationship between speaker and respondent. That is, its existence was not an arbitrary imposition by the researcher; rather, it was necessitated by the actions of members. When members failed to provide the expected response, the next act was obligated by this violation of expectations. Evaluation of such violations made visible, to participants and analysts alike, the “recovery work being done there to reestablish normal operations” (p. 102). Analysis of such points revealed the interactional activity that “supports the normative order of classroom lessons under normal circumstances” (p. 102). Through analysis of such patterns of action among participants, then, Mehan (1979) engaged in “an exhaustive analysis of behavior in the flow of events” (p. 37) that was part of a larger ongoing analysis he called constitutive ethnography:

The continuous flow of activity depicted on videotape or film is segmented into sequential phases and hierarchical components. This analysis continues until the researchers have derived a small set of recursive rules that completely describes the structure and structuring of events (McDermott, 1976). (p. 37)

This example shows how the theoretical perspective of ethnomethodology has a particular expressive potential that shapes what can be discussed, how the researcher engages in analytic work, and how questions of import shape the claims that can be made. This perspective also provides a particular way of talking about the relationship between language and activity and speaker-hearer relationships. Furthermore, the discussion shows how discourse analysis was grounded by an ethnographic perspective, one theoretically consistent with ethnomethodology.

A dialogic perspective and speaker-hearer relationships. Bakhtin (1986) provides another perspective on reflexivity in his distinction between language and speech and his conceptualization of the dialogic nature of speaker-hearer relationships. Bakhtin draws a distinction between language and speech communication that frames his perspective on speaker-hearer relationships. By contrasting a speech communion (dialogic) perspective with a linguistic perspective, he defines speaker-hearer relationships as reflexive. He argues that, from a linguistic perspective,

language is regarded from the speaker’s standpoint as if there were only one speaker who does not have any necessary relation to other participants in speech communication. If the role of the other is taken into account at all, it is the role of a listener, who understands the speaker only passively. The utterance is adequate to its object (i.e., the content of the uttered thought) and to the person who is pronouncing the utterance. (p. 67)

From a dialogic perspective, this relationship is complex and interconnected:

Any understanding of live speech, a live utterance, is inherently responsive, although the degree of this activity varies extremely. Any understanding is imbued with response and necessarily elicits it in one form or another: the listener becomes the speaker.... An actively responsive understanding of what is heard (a command, for example) can be directly realized in action (the execution of an order or command that has been understood and accepted for execution), or it can remain for the time being, a silent responsive understanding (certain speech genres are intended for this kind of responsive understanding...), but this is, so to speak, responsive understanding with a delayed reaction. (Bakhtin, 1986, pp. 68–69)

Thus, for Bakhtin (1986), speakers and hearers are not separate entities. Rather, each is implicated in the actions (speaking and hearing) of the other. Speakers do not speak to hearers who simply receive the speech (hear). Rather, a speaker expects a response, immediate or delayed, which in turn shapes how and what the speaker says. As Bakhtin (1986) noted:

Sooner or later what is heard and actively understood will find its response in the subsequent speech or behavior of the listener. In most cases, genres of complex cultural communication are intended precisely for this kind of actively responsive understanding with delayed action. Everything we have said here also pertains to written and read speech, with the appropriate adjustments and additions. (pp. 69)

Building on this, he argues that, in a dialogue, a response is not automatic; rather, "each rejoinder...has the specific quality of completion that expresses a particular position of the speaker, to which one may respond or may assume, with respect to it, a responsive position" (p. 72). Bakhtin, then, sees the speaker-hearer relationship as placing an obligation on the listener that serves as completion.

While this perspective appears to overlap with the ethnomethodological one, the assumptions and theoretical basis guiding this work differ from those of the ethnomethodologists. For Bakhtin, reflexivity of language is part of the very nature of the speaker-hearer relationships, but that moment of dialogue or communion may not lead to an explicit structuring of the next move by participants or even to an expected response. The focus for Bakhtin, then, is on interpretation and meaning construction, not on structuring social order. Bakhtin (1986) argues that "in reality any communication...addressed to someone or evoking something, has a particular purpose, that is, it is a real link in the chain of speech communion in a particular sphere of human activity or everyday life" (p. 83).

This brief discussion is not meant to be a definition of Bakhtin's theory; rather, it is meant to show how different ways of conceptualizing common constructs (e.g., speech in contrast to language, and speaker-hearer relationships) affect how reflexivity in social activity can be understood. From this perspective:

Language is realized in the form of individual concrete utterances (oral and written) by participants in the various areas of human activity. These utterances reflect the specific conditions and goals of each such area not only through their content (thematic) and linguistic style, that is, the selection of lexical, phraseological, and grammatical resources of the language, but above all through their compositional structure. All three of these aspects—thematic content, style, and compositional structure—are inseparably linked to the *whole* of the utterance and are equally determined by the specific nature of the particular sphere of communication. Each separate utterance is individual, of course, but each sphere in which language is used develops its own *relatively stable* types of these utterances. These we may call *speech genres*.

The wealth and diversity of speech genres are boundless because the various possibilities of human activity are inexhaustible, and because each sphere of activity contains an entire repertoire of speech genres that differentiate and grow as the particular sphere develops and becomes more complex. (Bakhtin, 1986, p. 60)

By relating this definition to the previous ones, we can see further the social and contextual nature of speech and the difference between a unit of "speech commun-

ion" (p. 67) and units of language (i.e., words and sentences). Central to this difference is that units of speech communion reflect the active understanding that members of a speech community signal to each other.

The dialogic or speech communion perspective of Bakhtin (1986), like the ethnomethodological perspective, can be viewed as a language of a research program that has a particular expressive potential (Strike, 1974). However, this language differs from ethnomethodology in particular ways that implicate different sets of phenomena of interest, questions to be examined, units to analyze, ways of conceptualizing and conducting that analysis, and the types of claims and explanations constructed. While both focus on the social construction of social activity, they frame that focus differently. Those seeking to use these perspectives need to understand the effect of this difference on their research and need to assess which perspective best fits their purpose.

Microethnography and the social construction of context. To further expand the view of reflexivity, we examine a third perspective, one that provides information about the ways in which contexts (situations) are socially constructed. Erickson and Shultz (1981), drawing on work on face-to-face interactions across a number of disciplines (i.e., anthropology, psycholinguistics, sociolinguistics, sociology), argue that contexts are not given:

Rather, contexts are constituted by what people are doing and where and when [and with whom] they are doing it. As McDermott...puts it succinctly, people in interaction become environments for each other. Ultimately, social contexts consist of mutually shared and ratified definitions of situation and in the social actions persons take on the basis of these definitions (Mehan et al.). [Furthermore]...interactionally constituted environments are embedded in time and can change from moment to moment. With each context change, the roles and relationships among participants are redistributed to produce different configurations of concerted actions...(Blom & Gumperz, 1972). Mutual rights and obligations of interactants are continually amenable to subtle readjustment (Cicourel, 1972) into different configurations of concerted actions that can be called participant structures (cf. Philips, 1972, 1974), or coherently co-occurring sets (cf. Ervin-Tripp, 1972). These structures include ways of speaking, listening, getting the floor and holding it, and leading and following. (p. 148)

Erickson and Shultz's perspective shows the dynamic, interpretive, and reflexive nature of members' actions and how, through these actions, members shape—and, in turn, are shaped by—the context being constructed. Furthermore, these authors argue that, along with shaping context, members are also constructing situated definitions of roles and relationships, rights and obligations, and cultural models (participant structures). Like cultural models, then, contexts are not given or static; they are also subject to negotiation, modification, and change, and these changes are interactionally accomplished by participants.

For these researchers, reflexivity is seen in what members orient to, how they coordinate (or fail to coordinate) interactions, what positions (roles and relationships) they take, and what rights and obligations they hold each other accountable for. Viewed in this way, content and context are reflexively related, shaping the meanings, activity, and positions that members construct. By using a microethnographic approach, they are able to examine the moment-by-moment interactions that lead to the construction of social participation structures (Erickson & Shultz, 1981) and to academic task structures (Erickson, 1982). These two types

of structures are dynamically and interactively accomplished in and through the same moments in time, place, and actors.

In this brief discussion, we again see a research language that describes the ways in which members of a social group construct the structures of everyday life. Again, the units and processes of analysis differ from those previously discussed. This difference influences what can be studied, how, in what ways, under what conditions, and with what outcomes. Furthermore, a comparative analysis across perspectives shows that Erickson and Shultz and Mehan (1979) drew on each other's perspectives in mutually informing ways.

Sociolinguistics, ethnography, intertextuality, and intercontextuality. The final perspective that we examine is work by Bloome and his colleagues (Bloome & Bailey, 1991; Bloome & Egan-Robertson, 1993) on intertextuality. As part of this discussion, we also include the work of Floriani (1993) on intercontextuality, since this work builds on that of Bloome and his colleagues. Collectively, these two bodies of work provide a view of reflexivity that ties different moments in time together, providing a way of understanding how members draw on past texts (oral or written) and practices (ways of being with and constructing text) to construct present texts and/or to implicate future ones. In addition, they describe and illustrate the value of a set of criteria for identifying intertextuality as socially constructed. These criteria can be used to apply a range of phenomena, including reflexivity, if we take an emic perspective as the goal (e.g., Floriani, 1993).

Bloome and Bailey (1992) propose the following conceptualization of and criteria for intertextuality, arguing that

whenever people engage in a language event, whether it is a conversation, a reading of a book, diary writing, etc., they are engaging in intertextuality. Various conversational and written texts are being juxtaposed. Intertextuality can occur at many levels and in many ways.... Juxtaposing texts, at whatever level, is not in itself sufficient for intertextuality. Intertextuality is a social construction. The juxtaposition must be interactionally recognized, acknowledged and have social significance.... In classrooms, teachers and students are continuously constructing intertextual relationships. The set of intertextual relationships they construct can be viewed as constructing a cultural ideology, a system for assigning meaning and significance to what is said and done and socially defining participants. (p. 49)

This dynamic and constructed view of intertextuality suggests that members and analysts alike must consider how members, through their interactions, propose, acknowledge, recognize, and interactionally construct as socially significant past, current, and future texts and related actions. For both members and researchers, then, these actions constitute a set of criteria for examining intertextuality as a cultural resource.

This perspective on intertextuality builds on Bakhtin's view of language as social activity to argue that

language is...social because any language act is a response to other acts, both those that preceded it and those that will follow (Bakhtin, 1935/1981). The meaning of an utterance or other language act derives not from the content of its words, but rather from its interplay with what went before and what will come later....

When language is viewed as part of an ongoing dialogue, as part of how people act and react to each other, then language is seen not as meaning *per se* but as meaningful, strategic action that is materially realized. That is, in order to engage in a dialogue, regardless of whether that dialogue is a face-to-face conversation or something else (e.g., an exchange of letters), people must do so in ways such that their actions and intentions can be understood by others in the event. (Bloome & Egan-Robertson, 1993, p. 309)

From this perspective, intertextuality is a form of reflexivity that can be identified in and across the actions of members as they construct the events of daily life. Like Mehan and Erickson, such analyses are grounded by an ethnographic approach to the study of language as social action. The particular theoretical orientation guiding this work draws on sociolinguistics and cultural anthropology (Green & Bloome, 1997).

Floriani (1993) expands the notion of intertextuality by proposing a related concept, what she calls *intercontextuality*. In an ethnographic study of discourse among members of a sixth-grade classroom, she observed students signaling actions and practices used in previous events (e.g., "like in the Island Project"). For members of this class, this phrase carried with it historical importance as well as social relevance of previously constructed cultural models that they now drew on to guide their participation in the current activity. She also found that members signaled future use of current texts and practices (e.g., "Tomorrow, we will use these data to construct estimated graphs in each group"). Thus, her work demonstrates how reflexivity crosses time and events within this classroom.

Floriani (1993), in building on the work of Bloome (as well as Erickson & Shultz, 1981, among others), who in turn builds on the work of Bakhtin (1986), demonstrates further the potential of bringing conceptually coherent constructs together to frame an enhanced logic-of-inquiry. These examples, then, show the intertextual nature of a logic-of-inquiry, as well as the complex web of theoretical perspectives needed to frame analysis of life in classrooms and other educational settings.¹⁰

Reconsidering reflexivity. Through our brief discussion of these four perspectives on reflexivity, we have attempted to make visible the theoretical language used by each group of researchers and how each provides a particular choice of phenomena, the way in which phenomena are conceptualized, the set of analysis procedures, and the type of explanations that can be constructed. In this way, we sought to make visible factors that researchers need to consider to construct a theoretically coherent logic-of-inquiry. While we have highlighted similarities and differences among perspectives through this discussion of reflexivity, we have also shown that, across these different perspectives, there is a common understanding that language simultaneously reflects reality ("the way things are") and constructs (construes) it in a certain way.

Furthermore, regardless of which perspective a researcher selects, if she or he accepts reflexivity as an important property of language or speech communion (in Bakhtin's, 1986, terms; i.e., of social activity), then the implications for the construction of a logic-of-inquiry are clear. The choice of reflexivity means that to examine how people learn in and through interactions with others, analysts will use an ethnographically grounded discourse analysis approach to analyze and represent sequences of talk within particular events and will examine ties among such

sequences across time and events in classrooms and other social settings. Furthermore, they will construct theoretically appropriate transcriptions (Ochs, 1983) that show concern for the reflexive, socially constructed, and interactive nature of the social situation (Green, Franquiz, & Dixon, 1997).¹¹

CONSTRUCTING A LOGIC-OF-INQUIRY: TOWARD A CONCEPTUALLY COHERENT APPROACH TO LINKING DISCOURSE ANALYSES

In the preceding discussion of language and discourse, we described ways of understanding how language simultaneously reflects and constructs the situation in which it is used. In this section, we describe two sets of elements that are central to an understanding of the relationships among discourse, social practices, and learning and illustrate how they can be used to analyze written artifacts from a classroom. The first set of elements we call *the MASS system* (material, activity, semiotic, and sociocultural aspects of discourse), and the second we call building tasks (i.e., what is accomplished through discourse that simultaneously shapes the discourse and social practices).

The MASS System

To identify key aspects of an ethnographically grounded approach to discourse analysis, we focus on "situation," because it is a key unit of analysis (segment of social life) for which discourse analysis is used across a number of current theoretical perspectives, including applied linguistics, conversational analysis, education, ethnomethodology, linguistic anthropology, linguistics, sociocultural psychology, social semiotics, and sociology.¹² The dimensions of situation that are presented in this section are those that a broad range of researchers across disciplines view as central to understanding the socially constructed nature of knowledge.

Four inextricably connected components or aspects of a situation are identified: a material aspect, an activity aspect, a semiotic aspect, and a sociocultural aspect (see Hymes, 1974, and Ochs, 1996, for conceptual discussions of the interconnections). The *material aspect* consists of actors, place (space), time, and objects present (or referred to) during interaction (e.g., Bloome & Bailey, 1992; A. Clark, 1997; Fairclough, 1992; Hanks, 1990; Latour, 1991; Levinson, 1996). The *activity aspect* refers to the specific social activity or interconnected chains of activity (events) in which the participants are engaging; activities (events) are, in turn, made up of a sequence of actions (e.g., Erickson & Shultz, 1981; Green & Wallat, 1981; Leont'ev, 1978, 1981; Mehan, 1979; Rogoff, 1990; Searle, 1969; Spradley, 1980; Wertsch, 1981, 1991).

The *semiotic aspect* refers to situated meanings and cultural models connected to various "sign systems" such as language, gestures, images, or other symbolic systems (e.g., Golden, 1990; C. Goodwin, 1981; Gumperz, 1992; Kress, 1996; Kress & van Leeuwen, 1996). The *sociocultural aspect* refers to the personal, social, and cultural knowledge, feelings, and identities (cognition, affect, and identity are all equally important here) relevant in the interaction, including sociocultural knowledge about sign systems, activities, and the material world (i.e., all of the other

aspects just described) (e.g., Gee, 1992, 1996; Gumperz, 1982a, 1982b; Hanks, 1995; John-Steiner, Panofsky, & Smith, 1994; Palmer, 1996; Scollon & Scollon, 1981; Sperber & Wilson, 1986; Spradley, 1980; Toolan, 1996; Ungerer & Schmid, 1996; Volosinov, 1973). These four aspects constitute the MASS system.

We present these aspects as separate categories for heuristic purposes. In actuality, they cannot be separated. However, since it is not possible during analysis to consider all of these aspects simultaneously, it is necessary for an analyst to foreground particular aspects while backgrounding others. The key to the analysis, then, is a form of part-whole relationship for the units being analyzed. Across different analyses, a broader, more holistic picture can be developed. Thus, these four aspects constitute a system (an interconnected network) within which each of the components or aspects simultaneously gives meaning to all of the others and obtains meaning from them. By using the MASS system, the researcher can move back and forth among meaning, activity, sociocultural practices, and form. This contrastive exploration can occur within a social situation and across time, place, and events.

To illustrate the relationship between everyday activity and this analytic perspective, we draw on an excerpt from a community essay (a cultural artifact) written by Arturo, a fifth-grade student in a bilingual classroom. This essay was taken from a discourse analysis of the community essays written by Arturo and his classmates in the 1994–1995 school year that was part of a larger ethnographic study of the social construction of knowledge in his bilingual classroom; this investigation, in turn, was part of a larger ongoing ethnography conducted in the participating teacher's classrooms.¹³ The excerpt is as follows:

In our Tower community, we have our own language as well as the languages we bring from outside (like Spanish and English) which helped us make our own language. So, for example, someone that is not from our classroom community would not understand what insider, outsider, think twice, notetaking/notemaking, literature log, and learning log mean... These words are all part of the common Tower community language and if someone new were to come in, we would have to explain how we got them and what they mean. We also would tell them that we got this language by reports, information, investigations, and what we do and learn in our Tower community. (Green & Yeager, 1995, p. 26)

In this excerpt, Arturo uses particular words (the material and sociocultural aspect) to describe (the semiotic aspect) a range of social and academic tasks facing him and his colleagues (activity aspect). Through these choices, he demonstrates knowledge about how members are constructing life within this community of practice. He contrasts the insider position with the outsider position to illustrate his claim that, for all, the community (material and sociocultural aspects) was evolving rather than fixed (material aspect). Specifically, he claims that, together, they constructed a language of the classroom (a material and sociocultural resource) through the languages that they brought: Spanish and English (material, activity, semiotic, and sociocultural aspects). In making this claim, Arturo demonstrated his awareness of the discourse (way of talking [sociocultural aspect]) used in this classroom (Gee, 1996; Ivanic, 1994), his knowledge that life in the classroom is both predictable and variable over time (Santa Barbara Classroom Discourse Group, 1992; Tuyay,

Floriania, Yeager, Dixon, & Green, 1995), and his understanding that activity and classroom events and actors' actions and meanings (texts) have material substance. Furthermore, in explaining that such sociocultural knowledge entails more than the names of "objects" or "activities," he makes explicit what members—as well as outsiders—needed to know, understand, and produce in order to participate in socially appropriate ways in this ongoing group and how such knowledge is gained through activity (life as text). In this way, he makes visible what is entailed in what a student entering in the middle of a previous year called "becoming just one of everyone else" (Green & Dixon, 1993). In other words, he identified the particular terms and their meanings (semiotic aspect) that guided his activity in the classroom and that marked him as an "insider."

Moreover, through his use of contrastive relevance, he demonstrated understanding of the ways in which his identity within this class was socially constructed and tied to particular positions that were available to him as a bilingual speaker (e.g., insiders, outsiders, English and Spanish speakers, Tower language speaker, we, our Tower community). His final statement shows that "group" (community) existed for him (material and sociocultural aspects) and that it was constituted by common understandings of collective activity and sociocultural knowledge of objects, actors, processes, and practices (Edwards & Mercer, 1987): "We also would tell them that we got this language by reports, information, investigations, and what we do and learn in our Tower community." In electing to write about these aspects of community construction, he demonstrated understanding that membership in a community is more than just being in the same physical space with a group of people. Furthermore, through the use of this particular type of writing convention (contrast, a sociocultural resource), Arturo described what was entailed in being an insider and in moving from outsider to insider (an activity aspect and a sociocultural aspect).

The MASS system provided a set of aspects that we drew on to examine the life world that Arturo inscribed. This example illustrated ways in which the MASS system can be used to inform analysis of texts written (artifacts) in and about particular communities of practice to obtain an emic perspective on what is learned and accomplished in educational settings. It also showed the value of this approach in developing a grounded perspective on student knowledge of social practices and the social construction of everyday life. Furthermore, the analysis revealed the interconnected nature of the different aspects of the MASS system in actual situations.

On What Members Build in and Through Discourse: Illustrative Examples

As we have argued in the previous sections, people do not talk for talk's sake or write for writing's sake. Rather, they talk (and write) for a purpose (i.e., to communicate with others in order to accomplish "things" with them or to show what they have learned). In this section and the next, we describe briefly several interconnected social building tasks that members construct in and through their oral or written texts. By using an ethnographic perspective, we provide a way to view what

speakers and writers are doing socially through these tasks: world building, activity building, identity building, and connection building. These building tasks are illustrative of a larger group of tasks that can be identified (e.g., gender building, building power relationships). They are ones that we see as relevant to studying learning as a sociocultural process (see Hicks, 1995, for a comprehensive review of what is learned and constructed through discourse).

As the discussion of the discourse of Arturo's essay showed, his text contained "cues" or "clues" (Gumperz, 1982a) that we used to construct a re-presentation (an analysis) of the world inscribed, to examine the positions (roles and relationships) inscribed for the actors in that world, and to analyze the activities inscribed as possible for these actors and the identities Arturo saw for himself in relation to membership in this classroom. In the example that follows, we illustrate how this process of construction or building is accomplished in the moment-by-moment interactions among members and how, through these moments, particular opportunities for learning, connection building, activity, and world building are constructed. Specifically, through this example, we show the ways in which the intertextual and intercontextual connections that are built support student learning.

To illustrate how a discourse analysis can make visible the intertextual and intercontextual by examining connection building, we present an analysis of a brief interaction between Arturo's teacher and another class member. This interaction occurred midway through a 2.5-month cycle of activity (Tuyay, Floriani, Yeager, Dixon, & Green, 1995) that served to introduce the processes and practices of social science to help students understand point of view.

As indicated in Table 1, this interaction was initiated by Jared with the claim "I don't understand. Can you explain what you mean about looking at things from a different angle." The teacher took up (Collins, 1987) Jared's problem and engaged in a dialogue with him that drew on a range of intertextual and intercontextual ties to previous activities, texts, and events. The column labeled textual references identifies those that we were able to locate in the ethnographic data set. In this brief example, we see how the participants used these references to past texts and contexts, across the months preceding this particular interaction, as a heuristic for helping Jared understand what he was to do in the current task (activity aspect) and to clarify the meaning of point of view (semiotic aspect). Thus, through an examination of what the teacher and Jared signaled as intertextually and intercontextually important and socially (and academically) significant, we are able to see how the teacher supported Jared in clarifying his understanding of both the task at hand and the concept of point of view.

This brief analysis highlights the potential relationship between in-the-moment analyses and ethnographic analyses of sociocultural aspects of life within a particular community of practice. Once the references are identified, it is possible to reenter the data and examine each of these moments in time to identify the social processes and practices that were constructed, the meanings that were developed, and what counted as appropriate actions and knowledge within each event or point in time reference. This example also illustrates how, within an activity as well as over time, worlds, identities, activity, and connections are built.

TABLE 1
Jared and the Teacher Talk About the 3 Pigs Project

POINT OF VIEW: (Social Science Activity—3 Pigs project—conversation reconstructed by the teacher. This occurred prior to Jared revising his drawing of the three pigs' events from the point of view of an ethnographer or detective)

Actor	Dialogue	Textual Reference
J:	I don't understand. Can you explain what you mean about looking at things from a different angle?	<ul style="list-style-type: none"> • teacher's talk "looking at things from a different angle" as text
T:	Well, remember the video of our first day that we observed? We were the ethnographers then.	<ul style="list-style-type: none"> • past actions from first day • video as text • actions of ethnographers
J:	OK.	
T:	What were you able to see?	<ul style="list-style-type: none"> • memory of events as text
J:	S & V & N moving around, changing tables . . .	<ul style="list-style-type: none"> • actions of everyday actors • class discussion as text
T:	Now, if someone watching that video who wasn't here the first day wanted to know if you were in the class, would they be able to tell?	<ul style="list-style-type: none"> • point of view of outsider • needing to use insider knowledge • teacher leading inquiry
J:	Not really.	<ul style="list-style-type: none"> • memory as insider
T:	Why?	<ul style="list-style-type: none"> • leading inquiry
J: text	Because of where the camera was pointed.	<ul style="list-style-type: none"> • seeing through camera angle as
T:	Exactly. From the angle of the camera, there were things you could observe and see and things you could not see and what you couldn't see was maybe as important as what you could see.	<ul style="list-style-type: none"> • point of view as the relationship between the camera angle, what can be seen or not seen • actions of observer • strategy that text does not represent the whole
J:	OK. I get it.	<ul style="list-style-type: none"> • further internalizing
T:	So, you know, you have to position our scientist or ethnographer . . .	<ul style="list-style-type: none"> • further referent of positioning to illustrate point of view
J:	So he's looking at it from a certain angle, probably.	<ul style="list-style-type: none"> • current dialogue using text
T:	You've got it.	<ul style="list-style-type: none"> • confirming Jared's understanding the social and academic practices as well as the concept

To highlight these dimensions of social activity more clearly, we offer the following definitions:

1. *World building*: assembling situated meanings about “reality,” present and absent, concrete and abstract (Gee, 1996; Gee, Hull, and Lankshear, 1996).

2. *Activity building*: assembling situated meanings about what activity or activities are going on, composed of what specific actions.

3. *Identity building (socially situated)*: assembling situated meanings about what identities are relevant to the interaction (written text), with their concomitant attitudes and ways of feeling, ways of knowing and believing, as well as ways of acting and interacting (Carbaugh, 1996; Gee, 1992, 1996; Gumperz, 1982b; Fernie, Davies, Kantor, & McMurray, 1993; Wieder & Pratt, 1990).

4. *Connection building*: making assumptions about how the past and future of an interaction, verbally and nonverbally, are connected to the present moment and to each other (after all, interactions always have some degree of continuous coherence; e.g., Bloome & Egan-Robertson, 1993; Floriani, 1993; Halliday & Hasan, 1976).

As suggested previously, these dimensions are common to each social situation. However, they do not exhaust all of the dimensions of social life that are built in and through the day-to-day interactions among members of a group. Others have shown how power, gender, access, literacy, and views of science, among other dimensions of human activity, are socially constructed. We invite readers to add to these dimensions and expand this framework. To support this effort, we present a way of intersecting the social building tasks with the language (discourse) aspects in the MASS system to form a frame that can be used to more systematically guide the construction of a logic-of-inquiry and the selection and use of relevant forms of discourse analysis. Table 2 provides a summary of the intersecting dimensions and representative questions.

As indicated in Table 2, it is possible to select more than one aspect to use in examining the oral and written discourse constructed by members of a social group or used by an individual member to complete a personal or group-defined task. Each building task, language aspect, and question provides particular information and requires particular analytic processes and procedures. No single study or analysis will use all of these elements or questions. Rather, in each analysis, the researcher will select those that are relevant to the questions being examined and the data being analyzed. Taken together, they form a more comprehensive picture of the social world, the actors and their actions, and what the actors are accomplishing socially.

Redefining Language: Social Languages As a Basis for Discourse Analysis

In presenting two examples from the work of Gee, we show how this framework can be used across types of data and discursive situations as well as across groups that differ in terms of age (elementary students, college students, and working scientists), mode (oral and written), and context (classrooms, science articles, conversations in social spaces). The discussion of these two examples serves an

TABLE 2
An Example of the MASS Framework and Related Questions

Building Task	MASS Aspect	Representative Questions
World Building	Semiotic Aspect	<p>What are the sign systems being used in the situation (e.g., speech, writing, images, and gestures)?</p> <p>What situated meanings of the words and phrases (and gestures and images) do members construct and/or signal to each other in the situation?</p> <p>What cultural models do members signal are being used to connect and integrate these situated meanings to each other?</p> <p>When a frame clash occurs between different interpretations of situation or use of cultural models, what do members do and what consequences does it have for each, as well as the group?</p> <p>What institutions, communities of practice, and/or discourses are being (re-)produced in this situation and how are they being transformed in the act?</p>
	Material Aspect	<p>When, where, with whom, and under what conditions are members interacting?</p> <p>What meanings and values seem to be attached to places, times, bodies, objects, artifacts, and institutions relevant in this situation?</p> <p>What name is given to this event/ situation, and to activity (if provided)?</p> <p>What situated modes and forms of language practices and processes are used as resources by members in this event?</p>
Activity Building	Activity Aspect	<p>On what is time being spent in this situation/event (i.e., what is the larger activity to which members are orienting in this situation)?</p> <p>What subactivities and sequences of these compose this activity?</p> <p>What actions (down to the level of things like "requests for reasons") compose these subactivities and activities?</p>
Identity Building	Sociocultural Aspect	<p>What norms and expectations, roles and relationships, and rights and obligations are constructed by, and/or signalled by, relevant members (the group) to guide participation and activity among participants in the event?</p> <p>What personal, social, and cultural knowledge and beliefs (cognition), feelings (affect), and identities (roles and relationships, positions) seem to be relevant to the situation?</p>

TABLE 2 (continued)

Building Task	MASS Aspect	Representative Questions
Identity Building	Sociocultural Aspect	<p>How are these identities signalled by members and/or constructed in the interactions among members?</p> <p>How are they transformed in and through the actions, responses, and collective activity in the situation (questions about situated meanings and cultural models will already bear on this)?</p>
Connection Building	Semiotic Aspect	<p>What sorts of connections (intertextual ties)—looking backward and/or forward—are made within utterances?</p> <p>What sorts of connections (intertextual ties)—looking backward and/or forward—are made across utterances and large stretches of the interaction?</p> <p>What sorts of connections (intertextual ties) are proposed, recognized, acknowledged, and interactionally made to previous or future interactions (activity) and texts, to other people, ideas, things, institutions, and discourses outside the current interaction?</p> <p>In what ways are the intertextual ties constructed within and across events (at each level of analysis) socially significant?</p>
	Sociocultural Aspect	<p>What sorts of connections (intercontextual ties) are made to previous or future interactions, to other people, ideas, things, institutions, and discourses outside the current interaction?</p> <p>What sorts of connections (intercontextual ties) are made to previous processes and practices (cultural patterns) and proposed, recognized, and acknowledged as socially significant outside the current interaction?</p> <p>Which processes, practices, and discourses do members draw on from previous events/situations to guide the actions in the current situation (e.g., text construction)?</p>

additional purpose, that of revisiting the issue of what we mean by language. If we are to examine the relationships among discourse, learning, and social practice, we must understand this concept we call “language.” Therefore, before presenting these examples and the contrastive analyses, we discuss what counts as language within our discourse analysis perspective.

What is important to discourse analysis is that all languages are composed of many different social languages (Bakhtin, 1981, 1986). Each social language uses

somewhat different and characteristic grammatical resources to carry out the four building tasks described earlier. All of us control many different social languages and switch among them in different contexts. In that sense, no one is monolingual.

It is important, as well, to note that often social languages are not “pure”; rather, people mix (“hybridize”) them in complex ways for specific purposes. It is sometimes quite difficult to know whether it is best to say that someone is switching from one social language to another (“code switching”) or that they are mixing two languages to assemble, for a given context, a transformed (even novel) social language (which may historically come to be seen as a “pure” and different social language in its own right). Of course, it is more important, in a discourse analysis, to recognize this matter than to settle it. People can even mix or switch between different social languages that are drawn from different languages.

In these two examples of social languages at work, keep in mind that discourse analysis is an analysis of social languages, not an analysis of language (like “English”) per se. The first example is the case of Jane, an upper-middle-class, Anglo-American young woman in her 20s who was attending one of Gee’s courses on language and communication. As part of the class, Jane recorded herself talking to her parents and to her boyfriend in different locations. In both cases, she decided to discuss a story the class had discussed earlier so as to be sure that, in both contexts, she was talking about the same thing.

In the story she chose, a character named Abigail wants to get across a river to see her true love, Gregory. A river boat captain (Roger) says he will take her only if she consents to sleep with him. Desperate to see Gregory, Abigail agrees to do so. But when she arrives and tells Gregory what she has done, he disowns her and sends her away.

Students in class had been asked to rank order the characters in the story from the most offensive morally to the least. Jane had selected Gregory as the least moral character as a result of this activity. This, then, is the historical context of the situation that she brought to the retelling of the story she selected.

In explaining to her parents why she thought Gregory was the worst (least moral) character in the story, the young woman said the following:

Well, when I thought about it, I don’t know, it seemed to me that Gregory should be the most offensive. He showed no understanding for Abigail, when she told him what she was forced to do. He was callous. He was hypocritical, in the sense that he professed to love her, then acted like that.

Earlier, in a discussion with her boyfriend in an informal setting, she had also explained why she thought Gregory was the worst character. In this context, she said:

What an ass that guy was, you know, her boyfriend. I should hope, if I ever did that to see you, you would shoot the guy. He uses her and he says he loves her. Roger never lies, you know what I mean?

When we approach the analysis of this discourse using a contrastive approach to examining its semiotic aspects, it is clear that Jane has used two different forms of language. The differences (different “cues” to how the situation is to be con-

strued) between Jane's two social languages are apparent in her two texts. To her parents, she carefully hedges her claims ("I don't know..."; "It seemed to me..."); to her boyfriend, she makes her claims straight out. To her boyfriend, she uses terms such as *ass* and *guy*, while to her parents she uses more formal terms such as *offensive*, *understanding*, *callous*, *hypocritical*, and *professed*. She also uses a more formal sentence structure with her parents ("It seemed to me that..."; "He showed no understanding for Abigail, when..."; "He was hypocritical in the sense that...") than she does with her boyfriend ("...that guy, you know, her boyfriend"; "Roger never lies, you know what I mean?"). Jane repeatedly addresses her boyfriend as "you," thereby noting his social involvement as a listener, but she does not directly address her parents in this way. In talking to her boyfriend, she leaves several points to be inferred, points that she spells out more explicitly to her parents (e.g., her boyfriend must infer that Gregory is being accused of being a hypocrite from the information that, although Roger is bad, "at least he does not lie, which Gregory did in claiming to love Abigail").

Through her choices of words, syntax, and content, Jane makes visible and recognizable two different versions of who she is and who her parents and boyfriend are (identity building), as well as what she and they are doing together (activity building). In one case, her language choices indicate that she is taking up the position of "a dutiful and intelligent daughter." This can be seen in the fact that, although she is a college student, she is having dinner with her parents. Furthermore, the language register she chose to use with her parents supports a more formal situation. In contrast, her language choices with her boyfriend indicate that she has positioned herself as "a girlfriend being intimate with her boyfriend."

By contrasting Jane's talk on the same topic across two settings with different types of actors, we show how a discourse analysis can be used to make visible the repertoires members have for interacting and communicating with different audiences. It demonstrates the situated nature of language choice. If all languages are social languages, and all instances of language use situated uses, then the implications for the study of learning in social context become clear. Rather than assuming that a single example provides an accurate picture of what students know, contrastive situations may be more productive. In contrasting what members display as learning, knowing, and understanding across different interactants with different situational contexts, a fuller picture may be obtained. Without the contrastive case (at whatever level, and using whatever types of resources, e.g., phonemic, intonational, lexical, different cultural expectations, texts, events, periods of time, people), we question the level of certainty in assessments of learning (Heap, 1980) that can exist when only one instance or context of use is considered. This leaves unexamined what the student can do or display as learning under other conditions (Giddens, 1990) and, thus, limits the degree of certainty about the claims that can be made. For example, we raise the question of how Jane would be assessed as a storyteller had the informal interaction with her boyfriend been the only example used. Certainly, her ability to use more formal registers would not have been understood (for a historical discussion of this issue related to African-American speakers of English, see Labov, 1969).

The second example of social languages at work comes from the “professional” domains. Biologists and other scientists often write for a range of journals, each with a particular type of audience. Thus, they write one way in professional journals aimed at other members of their particular intellectual community of science (e.g., biology), with all of its conventions and expectations for appropriate form and substance (content) (Bazerman, 1989; Toulmin, 1970, 1972), and they write another way in popular science magazines. These two ways of writing involve different activities and display different identities. From this perspective, a popular science article is not merely a “translation” or “simplification” of the professional article.

To illustrate these differences in language, purpose, and outcome, we present a contrastive analysis of two extracts. The first comes from a professional journal, and the second comes from a popular science magazine; both are written by the same biologist on the same topic (the example is from Myers, 1992, p. 150).

1. Experiments show that *Heliconius* butterflies are less likely to oviposit on host plants that possess eggs or egg-like structures. These egg mimics are an unambiguous example of a plant trait evolved in response to a host-restricted group of insect herbivores. (professional journal)

2. *Heliconius* butterflies lay their eggs on *Passiflora* vines. In defense the vines seem to have evolved fake eggs that make it look to the butterflies as if eggs have already been laid on them. (popular science)

By examining the cues in the two texts, we again see a difference in the language used. However, as our analysis will show, while the topic appears to be the same, the content differs, and this difference provides the grounds for examining the issue of identity building (among other social dimensions of interest, including issues of power and gender). The first extract, from a professional scientific journal, refers to the conceptual structure of a specific theory within the scientific discipline of biology.

Let us consider, then, how these two different social languages build different worlds, identities, activities, and connections. The first extract, from a professional scientific journal, is about the conceptual structure of a specific theory within the scientific discipline of biology. The subject of the initial sentence is “experiments,” a methodological tool in natural science. The subject of the next sentence is “these egg mimics”: Note how plant parts are named, not in terms of the plant itself, but in terms of the role they play in a particular theory of natural selection and evolution, namely “coevolution” of predator and prey (that is, the theory that predator and prey evolve together by shaping each other). Note also, in this regard, the earlier “host plants” in the preceding sentence, rather than the “vines” of the popular passage.

In the second sentence, the butterflies are referred to as “a host-restricted group of insect herbivores,” which points simultaneously to an aspect of scientific methodology (like “experiments” did) and to the logic of a theory (like “egg mimics” did). Any scientist arguing for the theory of coevolution faces the difficulty of demonstrating a causal connection between a particular plant characteristic and a

particular predator when most plants have many different sorts of animals attacking them. A central methodological technique to overcome this problem is to study plant groups (like *Passiflora* vines) that are preyed on by only one or a few predators (in this case, *Heliconius* butterflies). "Host restricted group of insect herbivores," then, refers to both the relationship between plant and insect that is at the heart of the theory of coevolution and to the methodological technique of picking plants and insects that are restricted to each other so as to "control" for other sorts of interactions.

The first passage, then, is concerned with scientific methodology and a particular theoretical perspective on evolution. On the other hand, the second extract, from a popular science magazine, is not about methodology and theory, but about animals in nature. The butterflies are the subject of the first sentence and the vine is the subject of the second. Further, the butterflies and the vine are labeled as such, not in terms of their role in a particular theory. The second passage is a story about the struggles of insects and plants that are transparently open to the trained gaze of the scientist. Further, the plant and insect become "intentional" actors in the drama: The plants act in their own "defense" and things "look" a certain way to the insects, there are "deceived" by appearances as humans sometimes are.

These two examples replicate in the present what, in fact, is a historical difference. In the history of biology, the scientist's relationship with nature gradually changed from telling stories about direct observations of nature (seeing) to carrying out complex experiments to test complex theories (Bazerman, 1989) and manage uncertainty (Myers, 1990). This change was caused, in part, by the fact that mounting "observations" of nature led scientists, not to consensus, but to growing disagreement as to how to describe and explain such observations (Shapin & Schaffer, 1985). "Seeing" became more and more mediated by theory and technology. This problem led, in turn, to the need to convince the public that such uncertainty did not damage the scientist's claim to be able to "see" and know the world in some relatively direct way, a job now carried out by much "popular science" writing. Note, here, then, too, how changing institutions play into the analysis of our texts, and how our analysis of these texts, in turn, helps illuminate the current and past workings of these institutions.

These two texts build different worlds (here the "nature-as-lab" versus "nature as open to the gaze"), different identities (here the experimenter/theoretician versus the careful observer of nature) and different activities (the professional contribution to science and the popularization of it). Further, they create very different sorts of connections: one creates, inside and outside the text, a chain of links in a theory; the other creates, inside and outside the text, a chain of links in seeing and in nature.

The worlds, identities, activities, and connections these texts, like all texts, build are licensed by specific socially and historically shaped practices and institutions representing the values and interests of distinctive groups of people. If we can use the term "politics" to mean any place where social interests and "social goods" are at stake, then all language-in-use is political in a quite straightforward sense (Fairclough, 1989, 1995; Lee, 1992; van Dijk, 1993). Since this is true, politics is

an integral part of any discourse analysis; it is part of any full description of a social language and of the four building tasks that social languages allow us to carry out.

An Interactive Approach to the Study of Learning in Communities of Practice

The discussion to this point has focused on establishing the conceptual and theoretical basis of the MASS system and framework for the study of learning in social settings and on illustrating particular elements and uses of the system. In the previous section, we showed how this system can be applied to different types of texts, groups, and social situations, with only a brief discussion of how this relates to the study of learning as a sociocultural process. In this section, we examine the relationships among discourse analysis, learning, and social practice in classrooms more explicitly. To do this, we need to add to our framework a sociocultural perspective on learning. This perspective, in different forms, guides our individual perspectives on learning. Here we present a mutually constructed view that examines learning within communities of practice. As argued here, this view of learning adds an explanatory aspect to the MASS framework, one that is needed for the current argument but not one that is central to all instances of use of the system. Viewed in this way, theories of learning are part of a broader framework that enhances the expressive potential of our research language when we focus on the study of learning in social settings.

One way to see the difference between these perspectives on theory is to revisit the distinction that Birdwhistell (1977) drew about the relationship of theory to method. The MASS system is a theoretically driven approach to discourse analysis that we use to analyze particular types of learning situations. Sociocultural theory is a theoretically framed approach to the study of learning and development as social constructions (e.g., John-Steiner, Panofsky & Smith, 1994; Lave, 1996; Rieber & Carton, 1987; Rogoff, 1990; Souza Lima, 1995; Wertsch, 1991). Given the common view of the social construction of knowledge and the focus on material, activity, semiotic, and sociocultural aspects of this process, we view these theories as mutually informing. From this perspective, we see a view of learning that focuses only on changing representations in people's heads as one that fails to engage the full range of semiotic, material, activity, and sociocultural aspects of situations that we have stressed previously. In bringing these perspectives together, we construct a logic-of-inquiry that provides resources for the study of the relationships among discourse, learning, and social practices that neither perspective can provide alone. In the next section, we show how these perspectives can be used to create a discourse-oriented analysis of learning in social settings. We then illustrate how this enhanced perspective can be used in the study of learning in a social situation.

Learning in Classrooms: A Sociocultural Perspective

The perspective on discourse analysis that we have developed so far encourages us to take a particular perspective on learning. As we illustrated previously, discourse analysis is as much (or more) about what is happening among people out

in the world (anthropology and sociology) as it is about what is happening in their minds (psychology). The approach to learning that is most compatible with an ethnographically grounded perspective on discourse analysis is one that defines learning as changing patterns of participation in specific social practices within communities of practice (Lave, 1988, 1996; Lave & Wenger, 1991; Rogoff, 1990; Rogoff & Lave, 1984; Souza Lima, 1995; Wertsch, 1981, 1991).

This view of learning requires us to see that people's activities are part of larger "communities of practice"; that is, groups of people who affiliate over time and events engage in tasks or work of a certain sort. This is the case whether they are students in an elementary school classroom, members of a street gang, members of an academic discipline, affiliates of a "cause," or participants in a specific business organization. Such communities of practice produce and reproduce themselves through the creation of a variety of social processes and practices. Within social processes, and through interactions constituting and constituted by social practices, they "apprentice" new members.

Many perspectives focus on production and reproduction (e.g., critical theory, sociology); each brings with it a particular view of this process, from a factory model to a human reproduction model. To frame the way in which we view this process, we draw on work on childhood socialization as framed by Corsaro, text construction through discourse as framed by Fairclough (1992), and work from a sociohistorical perspective as framed by Souza Lima (1995). Gaskin, Miller, and Corsaro (1993) argue that the relationship is interactive, dynamic, and recursive (a form of reflexivity), one in which the child is socialized to a culture and transforms that culture. Gaskin et al. argue for a dynamic view of

productive-reproductive to emphasize the creative nature of this process and to convey, in line with Giddens (1984), the duality of social structure. Giddens (1984, p. 25) argues that "the social structural properties of social systems are both medium and outcome of the practices they recursively organize" (see also Ochs and Schieffelin, 1984). This view of social structure provides the basis for the claim that the cultural-developmental process is not linear but reproductive. It is reproductive in that what children do with adults and other children involves the creative use, refinement, and transformation of available cultural resources.... In this view, socialization is not merely a matter of acquiring or appropriating culture at the level of the individual child but also a collective process of innovative or interpretive reproduction. (1993, p. 7)

From this perspective, as members interact with children and with others in their environments within particular institutional or social settings, they are simultaneously structuring and being structured by the actions between and among others. Viewed in this way, structures are not "out there" but are constructed as members interact with each other; a community of practice is constituted out of actions and situations (across time and space).

Fairclough (1993) captures this dynamic at the level of discourse. He proposed a three-dimensional framework that views

each discursive event [as having] three dimensions or facets: it is a spoken or written language text, it is an instance of discourse practice involving the production and interpretation of text, and it is a piece of social practice.... The connection between text and social practice is seen as being mediated by

discourse practice: on the one hand, processes of text production and interpretation are shaped by (and help shape) the nature of the social practice, and on the other hand the production shapes (and leaves "traces" in) the text, and the interpretive process operates upon "cues" in the text. (p. 136)

Viewed in this way, we can examine a text or interaction in terms of the social practices and discourse practices used. Furthermore, we can examine the text for traces of previous (and future/implicated) practices (e.g., for intertextual and intercontextual ties). The commonality of this perspective with the more macrosocial perspective of Corsaro and Giddens supports a dynamic and constructed view of learning. From these perspectives, learning, like text and social structure, is an outcome of the moment-by-moment and over-time actions of members of a social group. Moreover, if we use Bloome and Egan-Robertson's (1993) criteria for intertextuality, we can see members proposing, recognizing, acknowledging, and interactionally accomplishing situated definitions of what counts as learning that they view as socially significant to the group. This view of learning is a dynamic one. It is situated in particular contexts of practice, and it is, to a large extent, discursive in nature.

One way to view this perspective on learning has been framed succinctly by Souza Lima (1995). Building on sociohistorical theory, she argues that

we have two dimensions of development [and, by implication, learning]: one that resides in the individual and the other in the collectivity. Both are interdependent and create each other. Historically created possibilities of cultural development are themselves transformed by the processes through which individuals acquire the cultural tools that are or become available in their context. (Souza Lima, 1995, pp. 447-448)

From this perspective, then, learning and development are in a reflexive relationship, as are the individual and collective.

These three perspectives provide different, yet intersecting, perspectives on collective-individual relationships. A logic-of-inquiry that draws on them will view each local group as a type of community of practice in which members, through their face-to-face interactions (discourse as activity, as well as other forms of activity), construct the very patterns of practice that define the community. Thus, as members interact across time and events, they are continually defining and redefining what counts as community through the norms and expectations, roles and relationships, and rights and obligations constructed. Within such communities of practice, individual members are afforded access to particular events and spaces; thus, they have particular opportunities for learning and for acquiring the social and cultural processes and practices of group membership. However, if we take Corsaro's perspective, this process is not a "bring them into the culture view." Rather, members have agency and thus take up, resist, transform, and reconstruct the social and cultural practices afforded them in and through the events of everyday life.

This view of learning, then, suggests that an analyst must examine the collective as an entity that has a "material reality" and consider individuals and their actions in relationship to the opportunities for learning they are afforded while simultaneously examining how members, through their interactions, are shaping and being

shaped by the texts they are jointly constructing. Thus, the analysis must include the moment-by-moment, bit-by-bit construction of texts (oral and written), the chains of concerted actions among members, the role of prior and future texts in connecting these “bits of life,” and what members take from one context to use in another. In this way, the analyst can build a grounded view of the cultural models, social practices, and discourse practices that members draw on “to learn.”

While this is the ideal case, as we have argued, it is possible to examine a “slice of life” from this perspective to obtain an emic perspective on social participation and, through that, both opportunities for learning and situated views of what counts as learning. Given space limits, we illustrate what a “slice of life” analysis that focuses on examining opportunities for learning (Tuyay, Jennings, & Dixon, 1995) can show when viewed through the MASS system proposed in this chapter.

By conceptualizing learning through the notion of opportunities for learning (collective constructions) and opportunities to learn (individual opportunities), we establish a means of examining collective-individual development, learning as individual and collective activity, and discourse practices as socially constituted by and constitutive of learning opportunities. In this way, we can begin to examine the complex and dynamic relationships among discourse, learning, and social practice. Furthermore, as shown subsequently, we are able to identify the cultural ideologies and models that members bring to, inscribe in, and construct through the texts of classroom life by examining the processes and practices in which these members engage.

An Example of the Discursive Construction of Opportunities for Learning

The “slice of life” we examine comes from data on science reform being analyzed by Gee. The data that we consider are derived from a videotape of a classroom lesson and an accompanying booklet produced as a resource for teacher professional development in science education (Rosebery, Puttick, & Bodwell, 1996; all subsequent page and transcript references refer to this booklet). These cultural artifacts (i.e., teacher materials) present science in action in a second-grade classroom in Concord, Massachusetts (the town’s real name is used in the materials), an affluent town west of Boston. We selected these materials not to critique them but to show the complexity involved in understanding what counts as an opportunity for learning and how such opportunities are not mere activities but are constructed through activity among members on a moment-by-moment (or line-by-line) basis as they construct a common text.

The analysis of Gee’s (and Green’s previous) example, in this chapter, is a slightly modified version that resulted from dialogue among our perspectives. Our joint question that arose from the dialogue with these data became “What counts as learning, and how is this shaped in and through the actions of actors?”

This question was analyzed in two parts. In the first part, we examined the written materials provided. Just as we examined Arturo’s text and the scientist’s texts for cues to meanings, activity, sociocultural models, identity, and other aspects of building tasks, we approached this text in the same manner. After completing that

analysis, we examined the videotape data to explore what counts as learning science as represented by the actions and interactions of members of the second-grade class. At each point in our analysis, we tried to maintain an emic perspective; consider a part-whole, whole-part relationship; and use contrastive relevance as a guiding principle.

Building on the MASS system, we saw the authors of the booklet and the videotape as building a particular world, along with identities, activities, and connections, through their language and discourse choices as well as their choices of semiotic systems (e.g., written language, oral language, graphic materials, videotaped records of science lessons). The following excerpt from the booklet provides both an introduction to their perspective on science and an introduction to the videotape. In the booklet, they state that the videotape represents

the story of a class of second graders who designed experiments to investigate their questions about plant growth, focusing on the work of one group [of three girls] that wanted to study the effects of light. In small groups, the students planned, designed, and conducted experiments over a period of four weeks. At the end, each group presented their observations to the rest of their classmates and invited them to help interpret their data. In this way their teacher...introduced them to scientific ways of thinking and talking, which was the goal for this unit. (p. 4)

By examining the situated meanings of the words in this text (i.e., the cues to who the actors are and what they were doing together), we were able to examine what constitutes scientific ways of thinking and talking. The authors initiate this segment of text by calling it "a story." They continue by describing who the actors are, what they are doing together over time and events, what the sequence of activity entailed, what roles and relationships and patterns of organization occurred, and what types of interaction requirements were framed. They end this segment of text by stating that, through these patterns of actions and practices, the teacher "introduced [the students] to scientific ways of thinking and talking, which was the goal for this unit" (p. 4).

In this way, the authors construct a "telling case" (Mitchell, 1984), a case that makes visible theoretically what had not necessarily been visible before. We call it a telling case for two reasons: It was constructed as an instructional tool to use with teachers to help them acquire new knowledge of science pedagogy and it makes visible to us, as analysts, a particular understanding (not the only understanding) of what counts as doing and teaching science to the actors involved in the processes represented in the text.

The actors identified are second graders who were working in small groups over a 4-week period. The actors on whom the videotape focused were three girls who worked together over the period to study the effects of light. These girls (as was the case for members of each of the groups) were expected to interact with rest of their classmates and their teacher in particular groupings (whole-class, small-group, and small-group-whole-class interactions) at particular points in time for particular purposes (at

one point to design the experiment, at a second point to conduct the experiment, and at a third point to invite help in interpreting their data from other class members). By analyzing the chains of activity and by examining who the actors were in each of these chains (Spradley, 1980, calls this process a domain analysis), we were able to identify a range of configurations, all of which were collective, including the teacher, who was framed in relationship to the students and different types of groups. Furthermore, by examining the actions that these actors took among themselves and with others, we were able to identify a shift in the frame for the activity and, through this, a shift in the model of science being constructed.

We began the analysis by examining, through consideration of the words used by the authors, the language of the booklet for the sorts of situated meanings given to words such as *experiment*, *data*, *observation*, *interpret*, and *science* (and related terms) and the cultural models seemingly attached to them. The analysis showed that the passage involved many words for "scientific work" but that that work did not accumulate in terms of results in any strong manner. For Example, consider how in the passage from the booklet quoted above the students conduct "experiments over a period of four weeks." While these students, it turns out, discover, however tentatively, that "more light makes plants grow better," they are not asked, in the last part of the quoted passage, to share their "results" or "findings" with the whole class. Rather, they are asked to present their "observations" and "invite" the whole group to help them "interpret" their "data."

This initial examination of the booklet gave us our own tentative hypothesis, one that we could test further by an examination of the actual classroom interaction. It looks as if the booklet shifts from one model of science to another. In the first case, it treats science as a form of work in stages that is meant to issue in a result (the classical experimental model of science). In the second case, it treats science as a form of looking or witnessing through which one gains "observations" (data) that need interpretation much like literary texts do. The booklet, in a sense, seems to add the second model onto the first one as its final stage. Rather than attempting to contest or support the results of the girls' experiment, the whole group is asked to discuss different ways of interpreting the observations the girls have made on the way to gaining their results.

We then turned to the actual classroom interaction to which the booklet was but an introduction. Our analysis, of the booklet and the interaction, is grounded both in an emic perspective on what members appeared to need to know and do to accomplish their tasks in socially appropriate ways within their emerging community of practice and in a more etic perspective based on our own cultural expectations and knowledge of research directions in science education. We try to keep these perspectives separate. However, given the interactive and responsive nature of this work, this is not always possible.

152 *Review of Research in Education, 23*

Let us turn now to that classroom interaction. The teacher starts his instructional sequence by encouraging the children, in small group discussions, to come up with predictions.

Transcript Segment 1

Krysta: I thought maybe it was going to grow best um over by the window and at the grow plant table.

Lia: Yeah.

Teacher: Do you think it will grow like—really good in the grow table and the window and not at all in the other places?

Krysta: Maybe not at all in the closet.

Teacher: Okay.

Ceysa: Because that would be pretty dark.

In this discussion with their teacher (Transcript 1, booklet pp. 17–18), the three girls on whom the booklet and video materials focus construct a group-accomplished prediction something like the following: “Light causes plants to grow better (or be healthier).” We call this a group prediction, since each member of the group contributed a “piece” to the prediction. In the way in which they add to the interaction, the three girls signal their involvement with the task and their expected interpretations and understandings of the contrast.

One way to view the teacher’s choice of actions (i.e., his response to the students’ initial thoughts) is to see him as positioning the students to respond in particular ways: to think about other places where the plant might not grow well. The students’ actions show that they take up this position and respond appropriately. They take up his strategy of comparing places.

In the following transcript segment (Transcript 2, pp. 18–19), the teacher engaged in actions we have labeled guidance (scaffolding).

Transcript Segment 2

Lia: Maybe they’re a little bit more green if they’re healthier....

Teacher: Okay, so maybe it’s not— maybe it’s greenness too.

Lia: Yeah.

Teacher: All right.

Lia: Or whatever color it is....

Ceysa: And like they're standing up straighter and dead ones sort of hang down.

Teacher: Okay, so like if they're limping over....

Ceysa: A lot....

In this sequence, we see the teacher eliciting from the girls a decision that "greenness" and "straightness," and not "height" alone, are criterial attributes of having "grown better" or of "health." In this way, he jointly constructs an answer with the students.

After such small-group discussion work, the girls actually run their experiment, placing plants in various light conditions, ranging from plants grown 24 hours a day under a grow light to plants grown 24 hours a day in a dark closet and in various other conditions (e.g., in a window that is light in the day and dark at night).

The experiment was successful, by and large confirming predictions. Some of the plants grown in the closet (a low light condition) had, however, grown tall, although they were pale yellow (not green) and droopy (not straight). Thus, however anomalous their height, the plants were not healthy by the criteria the girls had decided upon, and so their prediction was supported nonetheless.

Across these segments, then, we were able to see the types of opportunities for learning afforded these girls. As indicated in the activity aspects of these situations, the girls were given a range of opportunities: They were able to jointly construct a prediction and to learn from the teacher appropriate types of actions to take to test the prediction (to place the plants in different places, each with different conditions). They were also afforded the opportunity to compare and contrast plant growth under the varying conditions. Through these opportunities, they were afforded the further opportunity to explore and take up a particular language of science.

After the girls had finished their experimental work, there was a full class discussion in which the girls first gave a brief presentation on their experiment, displaying their plants. Then, as the booklet states, the other children were "invited" to help the girls "make sense of their data." This part of the curriculum involves an entire class in "sense-making discussion." This description, obtained by observing the actual actions and activity among members, provides insights into the questions that we had after analyzing the author's description in the "booklet." The girls were able to present the visual as well as oral evidence to the group. In this way, they were given an opportunity to discuss and describe their experiment.

However, this activity was not the final activity; rather, a period of sense making occurred.

Transcript 3 provides us with a base for examining what counted as “inviting interpretation.” Analysis of this transcript showed that the activity has changed in an important way, from small-group discussions devoted to planning and carrying out “hands on” science activities to large-group discussions devoted to “making sense” (a “minds on,” not “hands on,” activity).¹⁴ As the segment that follows will show, concomitant with this change in activity, the sorts of identities and related talk the teacher and children adopt (or are expected to adopt) change as well. This change in identity is reflected in who can speak, who is recognized as knowing, and whose knowledge and/or comments are accepted. While a full discourse analysis would be needed to trace these changes and to assess what students in different organizational contexts (the group, individuals within the group, and the small-group members) learned, the following segment illustrates what can be identified through this type of contrastive analysis.

The following is an extended example from the whole-class discussion that shows some of the diversity of talk generated in and supported by this situation (pp. 32–37):

Teacher: Does anybody have any idea about why those [pale plants grown in the closet] might be that color [i.e., not green]?

Lia: Karen?

Karen: Because, um, that's in the dark and it doesn't get any light maybe.

Girl: It does get a little light.

Girl: It gets the teeniest bit.

Girl: Aleisha?

Aleisha: I think it's that color because it doesn't get that much light, and, it—it has—and plants grow with light, so.

Krysta: Michael?

Michael: Well, I think these are—there are these special rays in light that make it turn green and it's not getting those rays, so it won't turn green.

Michael: Like a laser and a light beam are almost the sa- are almost different- I mean they are different kinds of light. So, maybe there's this kind of light in the air that maybe we can't see, but maybe the plants need it maybe to turn green.

Anna: I think, um, the rays, um, gives the plant food, and um, they like store the food in the leaves and cotyledon, and the food like makes it turn green? And stuff.

Michael: Yeah, that sounds like an idea behind my idea.

Will: Um, maybe it's not the light. Maybe it's heat....

[discussion about heat and air and other things]

Teacher: This never turned green. These became green for some reason, and that never became green.

The teacher poses the opening question and asks whether anybody has any idea about why the less green plants (grown in the closet) might be less green (we consider the actual form of this utterance in the next section). Lia then takes up the role of calling on people who are raising their hands (note that the three experimenters get to call on classmates) and calls on Karen to respond to the teacher's question. She says: "Because, um, that's in the dark and it doesn't get any light maybe." Her "um," her "maybe," and the form of this utterance (with a raising pitch at the end) indicate that she is treating the answer to this question as "news." Her response is contradicted by another girl, whose own response is also qualified by a third girl.

Aleisha is then called on to respond. She states that she too "thinks" that the answer has to do with light. Her response, however, is a slightly expanded restatement of information already on the floor. By not adding new information, she shows that she also believes this is "news" and open to "speculation." No one responds to her statement. Neither student's responses indicate they are aware of the epistemological status of the claim they are making about light, namely that it follows from the logic of the experiment the girls have carried out and presented to the group. Furthermore, Aleisha uses the generalization "and plants grow with light, so" as a piece of general knowledge unconnected to the experiment the girls have carried out.

Following Aleisha's turn, Michael and Anna engage in talk that more genuinely takes off from where the girls' experiment has ended, and they attempt to help the girls explain (not just "interpret") their "results." Explanation requires going beyond the mere causal claim, which the girls' work has established, that "light causes plants to grow better (healthier)" by discussing things that might mediate between light and health. Michael introduces "different kinds of light" and things "plants need." Anna goes yet further and introduces a true mediating variable (between "light" and "health"), namely "food," which the plants "store in the leaves and cotyledon" and which "[make them] turn green."

This explanatory talk is, however, not followed up on, and Will returns the group to another type of talk that our analysis showed was pervasive in the whole discussion, namely talk about what variables were and were not controlled in the experiment (part of the earlier activity of experimental design). Will suggests that heat, and not light, might be the important causal variable.

After the talk about heat to which Will's contribution gives rise, the teacher says, "These [the plants that had been given ample light] became green for some reason." The teacher's "for some reason" implies that this reason is waiting to be discovered as "news" through the process of discussion (much as Karen and Aleshia had assumed). But that is exactly what the girls' experiment was designed to discover.

Our analysis shows that the pattern of talk shaped particular opportunities and, at the same time, precluded others. Through analysis of the chains of action supported by the teacher, we found that the children had entered a different activity, one in which the causal claim "Light makes plants grow better (healthier)" is again "up for grabs." In the prior activity sequence (experimentation), it was, however, the end product, the achievement. This contrast of outcomes pointed us to the need to think about the relationships between the different activities in this overall instructional sequence and to ask questions about the purpose of each type of activity: What were the students expected to know as a result of each phase of activity? What views of science were visible in each phase? Who had access to these views? Whose views counted in each?

To examine these questions, we focused our analysis not on the general sequence of activity but the specific types of actions that the students were able to perform in the group phase in contrast to the small-group phase. Building on the theoretical view that all activities are composed of subactivities and that subactivities are composed of smaller actions, each of which recruits different forms of language, we identified a range of actions that the children could take in the large-group discussion activity: "explaining," "guessing," "hypothesizing," "critiquing," "questioning," "suggesting," and others. We also identified a general characteristic of such an activity in this discussion. These actions occurred and interrupted each other in a fairly flexible way, depending, in part, on how different children interpreted the teacher's questions, other students' contributions, and the activity they took themselves to be in.

Such "hybridity" raised interesting questions about how different children in the discussion assemble situated meanings and begin to form cultural models; how they begin (or fail) to learn and use different social languages; what identities they do or do not take on; and how these relate to the identities they have taken on in other activities in this classroom and elsewhere.

We can see that, in this discussion, Michael and Anna function quite differently from many of the other speakers in regard to their language and what they take the activity to be. Our analysis showed that Michael and Anna consistently, here and elsewhere in the discussion, treated the task as adding an explanation to the girls' achievement of the causal claim that light makes plants grow better and healthier. Thus, by contrasting a pattern observed at one point in the discussion, we were able to obtain a picture of a more general case for Michael and Anna and then contrast

this with other students. In this way, we constructed an argument that they took up different identities, through the types of actions they took with each other and in relationship to the content and activity of others.

The actions taken by the actors and the activity jointly constructed across phases of this event confirmed our initial hypothesis that two different views of science were being constructed at different points in this instructional unit. In one phase, students had an opportunity to engage in "an experimental model of science," one centered around a sequence of logically related activities: making a prediction, designing an experiment (e.g., controlling variables), gathering data, interpreting data and looking for anomalies, confirming or disconfirming (aspects of) the initial prediction, and then seeking to find a deeper explanation (in this case, for why light makes plants grow better and healthier).

Students also had an opportunity to participate in and to construct a second model (what we might call the "sense-making model") that was centered around the idea that people make sense through open-ended (i.e., less sequenced and constrained) collaborative talk with each other, pooling their knowledge and building upon each other's contributions in a quite egalitarian way. Work on the sociology of science suggests that both of these cultural models are used by laboratory scientists (e.g., Knorr-Cetina, 1983, 1995; Latour & Woolgar, 1986). However, in the astrophysics lab that they studied, Garfinkel, Lynch, and Livingston (1981) found that the astronomers, through their negotiations, transformed an observed phenomenon in their data from an "evidently-vague IT which was an object-of-sorts with neither demonstrable sense nor reference, to a 'relatively finished object'" (p. 135), an independent Galilean pulsar.

The observed activity in the classroom, however, did not lead to this type of conclusion. What seemed to happen, in this case, is that some children treated the discussion as just such an explanatory endeavor, while others (with the implied permission of the teacher, as indicated in his actions) treated it as a more autonomous activity in which the experimental work already done could be revisited in ways that sometimes ignored what had already been accomplished. This appeared to return the girls, who were at the end of a set of tasks, back to where they began. While we cannot determine from these data whether knowledge did not "accumulate," for the girls or the group, what we can see is that there was a lack of resolution or a shared consensus, elements that Toulmin (1970) and others who have studied the history of science suggest characterize science communities.

Such a lack of resolution led us to wonder why this "sense-making" activity (with its great hybridity and open-endedness) was positioned as the last step of an activity sequence based on the experimental model. It also raised further questions about where an activity might be placed that would support the construction of "deeper explanations of one's successful prediction." We wondered how the developers saw the action of the students and how they would actually use this videotape segment with teachers. This issue led us to ask further questions: What model of science did the developers seek to support? Did they see a conflict between the two models here? Finally, was this example selected to raise questions such as these so that the group of teachers might challenge their views and discuss the implications of each model?

While these questions cannot be answered at this time through the present discourse analysis, the questions we raise are ones that can be examined further in future studies. Some might respond that the simple answer to this analysis would be to move to a more direct instruction model. However, past research has not shown that this simple answer will promote the type of learning and learners that reform efforts, regardless of perspective, desire.

What logic-of-inquiry demonstrated was that a range of different approaches to discourse analysis were needed to examine the complex patterns constructed in these written and oral texts. It also illustrated the interactive-responsive nature of this type of discourse analysis, in which one analysis provides a basis for comparison with others or in which an analysis of one type of data generates hypotheses that can be examined further through analysis of a second type of data. By examining the over-time construction of activity and examining cues to shifts in activity, we were able to present evidence of a tension between two models of doing science in this classroom. The data selected, therefore, formed a telling case that raised issues not visible at the outset.

What the analysis did not do was equally telling. From these data, we could not generalize to all classrooms. Nor can we determine how these materials are used. While we identified questions about the materials, these questions are not a critique of this professional development effort. Rather, they are questions that can shape new discussions around these materials, ones that will examine issues about the models of science and science pedagogy that teachers and others (reform agents) seek to promote and use.

A CLOSING AND AN OPENING: ON IMPLICATIONS FOR RESEARCH, THEORY, POLICY, AND PRACTICE

This chapter has focused on what is involved in constructing a logic-of-inquiry that is theoretically driven and conceptually coherent. The analysis of the science data from Gee's study of science reform showed that an ethnographically grounded logic-of-inquiry can be used to make visible the ways in which models of science are constructed in and through the moment-by-moment and over-time actions of members. This work combines with a growing body of work using discourse analysis and ethnographic perspectives to examine what counts as science, how science is learned in different types of classrooms, and how opportunities arise for learning science content and science practices (e.g., Bleicher, 1994; Carlsen, 1992; Crawford, Chen, & Kelly, 1997; Kelly & Crawford, 1997; Moje, 1997). These studies provide insights into the ways in which differential opportunities for learning are afforded students in classrooms and how everyday life is consequential in different ways for different students. Furthermore, they contribute new understandings of the students' agency in this process.

What our analyses in this chapter illustrate is that, by using a logic-of-inquiry in which we moved back and forth between segments of activity (and across time and events) and by contrasting the patterns identified, we were able to make visible (a) differences in models of pedagogy constructed at different times by the same group of actors, (b) differences in models of science used by a scientist in writing about his research for different audiences, and (c) differences in registers used by an

individual with different types of partners and similarities in claims about life in the classroom with the same teacher in different years. In each of these analyses, we needed to move between meaning aspects (semiotic), material aspects, activity aspects, and sociocultural aspects to identify ties among patterns across time, sources of influence on observed actions, and the ways in which collective and individual actions, identities, and patterns of interaction were constructed and socially significant. No single point in the analysis would have been sufficient, and no single approach would have provided the information obtained through the logic-of-inquiry we constructed across levels and types of discourse analysis. Only through the use of multiple data sources, multiple approaches to discourse analysis, and a contrastive analysis were we able to identify these similarities and differences and to understand the conditions that gave rise to them.

Given this view of research as social action, we have to consider how analyses such as the ones presented here might be used to inform educational stakeholders, including researchers, educators, and policymakers, interested in ways of supporting equity of access to educational processes and practices. Rather than pose recommendations for change, we have elected to present a discussion of what constitutes validity as a closing to this chapter.

What constitutes validity for a discourse analysis? Validity is not constituted by arguing that the analysis “reflects reality” in any simple way (Carspecken, 1996; Mishler, 1990) for two reasons. First, humans construct their realities, although what is “out there,” beyond human control, places serious constraints on this construction (thus, “reality” is not “only” constructed). Second, just as language is always reflexively related to situations so that both make each other meaningful, so too is discourse analysis. The analysis interprets its data in a certain way, and those data, so interpreted, render the analysis meaningful in certain ways and not others.

These two considerations do not mean that discourse analyzes are “subjective,” that they are just the analyst’s “opinion.” Validity for discourse analysis is based on the following three elements; (a) *Convergence*: A discourse analysis is more, rather than less, valid (validity is not once and for all; all interpretations are open to ongoing discussion and dispute), the more different analyzes of the same data or related data, or different analytic tools applied to the same data yield similar results; (b) *Agreement*: Answers to our questions are more convincing the more both “native speakers” of the social languages in the data and other discourse analysts (who accept our basic theoretical assumptions and tools) agree that the analysis reflects how such social languages actually can function in such settings. The native speakers do not need to know why or how their social languages so function, just that they can. (c) *Coverage*: the analysis is more valid the more it can be applied to related sorts of data. This includes being able to make sense of what has come before and after the situation being analyzed and being able to predict the sorts of things that might happen in related sorts of situations.

Why does this constitute validity? Because it is highly improbable that a good many answers to different questions (i.e., data from different sources), the perspectives of different “inside” and “outside” observers, and additional data sets, will

converge unless there is good reason to trust the analysis. This, of course, does not mean the analysis is true or correct in every respect. Empirical science is social and accumulative in that investigators build on each other's work in ways that, in the long run, we hope, improves it. It does mean, however, that a "valid" analysis explains things that any future investigation of the same data, or related data, will have to take seriously into account.

We can also point out that it is highly improbable that answers to many of the questions facing those concerned about learning in social contexts require generalizable strategies or recommendations. It is much more probable that they require local, situated answers. Indeed, when a teacher is faced with a decision about what to do for "Sue" and what to do for "Sonia," the answers needed may be quite different. From this perspective, then, equal treatment, if it means the "one-size-fits-all" model, may not be equitable. Therefore, what is needed is not a single recommendation or definition of learning but, rather, a way of examining the individual-collective relationships that constitute the "local" opportunities for learning that students and others experience in educational settings and examining how and what students gain from such opportunities. As this chapter has shown, such an approach must be able to answer different questions, provide a means of analyzing data from different sources, and be able to account for differences in the perspectives of different "inside" and "outside" observers. In addition, it must be provide a basis for the analyst to move across types of data in theoretically coherent ways. Finally, it needs to provide evidence of the logic-of-inquiry that supported the multiple analyses.

If these conditions can be met, then it will be possible for investigators to build on each other's work in ways that in the long run, we hope, expand and enhance this work, individually and collectively. Such building tasks, however, will need to be based on a firm foundation of coherence of theoretical perspectives, not consistency alone. In that way, we can expand the expressive potential of our individual languages and perspectives and construct a more general perspective, one with greater expressive potential. We believe that Kenneth Strike's (1974) view of expressive potential will be one of the key tests of the validity of this new language. The questions that must be asked, then, are the following: What is the expressive potential of this perspective for the phenomena of importance to a certain individual? What types of questions does it allow the individual to answer? and Which questions cannot be answered using this approach?

NOTES

¹As a member of the Santa Barbara Classroom Discourse Group, my contributions are both individual and collective. My contribution was shaped by members of this group and related colleagues, both historically and in the moments of writing. Therefore, in addition to the contributions of Hugh Mehan to the direction and production of this chapter, I would like to acknowledge contributions by particular members of the group and colleagues who interacted with me and provided data for this chapter: Carol Dixon and Greg Kelly, University of California, Santa Barbara; LeAnn Putney, University of Nevada, Las Vegas; Ana Floriani, Illinois Wesleyan University; Elaine Vine, University of Canterbury, New Zealand; David Bloome, Vanderbilt University; and Beth Yeager, McKinley Elementary School.

²Studies of learning in social settings combining ethnography and discourse analysis have been undertaken from a number of theoretical perspectives: anthropological (e.g., Gilmore & Glatthorn, 1982; Cook-Gumperz, 1986; Bloome, 1987; Green & Bloome, 1997; Green & Dixon, 1993; Green & Wallat, 1981), social semiotic (Christie, 1995; Lemke, 1990), social psychological (Edwards & Mercer, 1987), and sociological (e.g., Bernstein, 1996; Mehan, 1979; Heap, 1991).

³Examples of these combined approaches can be found in educational research handbooks across disciplines (e.g., literacy education, science education and teaching), in research monographs, and in edited volumes, as well as previous volumes of *RRE*. Furthermore, in the last decade, major research journals across educational research disciplines have become more receptive to studies that use discourse-analytic perspectives and methodologies. Discourse-analytic approaches have been developed to study the relationship between discourse and schooling practices (e.g., Cazden, 1986; Cazden, John, & Hymes, 1972; Green, 1983; Green & Wallat, 1981; Mehan, 1979, 1985; Sinclair & Coulthard, 1975; Stubbs, 1983; Wilkinson, 1982), discourse and learning in classrooms (e.g., Duran, 1995; Edwards & Furlong, 1978; Edwards & Mercer, 1987; Gee, Michaels, & O'Connor, 1992; Green & Harker, 1988; Gumperz, 1986; Mehan, 1979), discourse and other forms of observational (Evertson & Green, 1986) and qualitative research (Erickson, 1986), discourse and science (Kelly & Green, 1997; Lemke, 1997), and discourse and literacy research (Baker & Luke, 1991; Bloome, 1987; Bloome & Green, 1984; Cook-Gumperz, 1986; Gee, 1996; Green & Dixon, 1993). The preceding articles, monographs, and collections are illustrative and not all inclusive. They were selected to provide information about and access to a broad range of approaches.

Work by individual authors and groups of authors can be found in major educational research journals. Discourse-analytic studies can now be found in the *American Educational Research Journal*, *Anthropology and Education Quarterly*, *Cognition and Instruction*, *Elementary School Journal*, *Harvard Education Review*, *Journal of Classroom Interaction*, *Journal of Literacy Research*, *Journal of Research in Science Teaching*, *Linguistics and Education*, *Reading Research Quarterly*, *Research in the Teaching of English*, and the *TESOL Quarterly*, among others, attesting to the growing interest in the insights afforded by this research perspective.

⁴We argue that what is needed is a set of approaches that cohere in theoretically oriented ways, and not a consistent set of methods, given the range and type of data collected within an ethnographic study or studies guided by ethnographic perspectives. What remains constant in this approach is the theoretical perspective and approach that guides selection and analysis of particular methods of analysis. This approach allows us to be responsive to the type of data being analyzed and the questions being examined. To use a consistent set, selected on an a priori basis, would require that we impose a logic on the data rather than constructing one in response to the type of data under examination.

⁵We recognize that there are a number of different perspectives on culture in anthropology. However, we have elected to use the cognitive anthropology perspective articulated by Frake (1977) and Spradley (1980) for heuristic purposes. We recognize the limitations of this work but find it productive in the current context. Given that Spradley died in 1980, we do not know whether, or how, he would have modified his work in the face of the criticism of cognitive anthropology by Geertz (1983) or in the face of the criticisms by others. Thus, we view this theory as a material resource and not as a fixed statement of reality.

⁶Drawing on Spradley (1980), we use the term *action* rather than *behavior*, since in communicative situations, participants act purposefully. As we have argued, through their use of contextualization cues, they signal to others their meanings and intentions.

⁷For a seminal collection of discourse and ethnographic studies that examine this issue in the area of language and schooling, see Cazden, John, and Hymes (1972); in the area of literacy and schooling, see Bloome (1987; Cook-Gumperz, 1986); for a seminal article on how, through language, members of the schooling culture structure school structures and thus access to learning, see Mehan (1979).

⁸We distinguish here between members' perspectives and members' perceptions. The first is a point of view (angle of vision) from which to view the event, situation, and analysis. The latter requires interviewing participants in a local situation about what they perceived.

⁹For a discussion of related constructs and approaches, see Bauman (1986), Duranti and Goodwin (1992), Gumperz and Levinson (1996), Harre and Gillett (1994), Hymes (1996), Lynch (1993), and Pickering (1995). For overviews of an important and quite specialized approach to discourse analysis, "conversation analysis," that studies the ways in which language in social interaction produces and reproduces "order" in society, see Goodwin and Heritage (1990), Heritage (1984), Psathas (1995), and Wootton (1989).

¹⁰For examples of other linked programs of research using discourse analysis in education, see Cook-Gumperz (1986); Fernie, Davies, Kantor, and McMurray (1993); Gee, Michaels, and O'Connor (1992); Gilmore and Glatthorn (1982); Green and Dixon (1993); Kantor, Miller, and Fernie (1992). Also, see reviews by Cazden (1988) and Hicks (1995). For examples of how researchers have brought conceptually different perspectives into deliberate juxtaposition, see and Green and Harker (1988).

¹¹Any speech data can be transcribed in more or less detailed ways such that we get a continuum of possible transcripts ranging from very detailed (what linguists call "narrow") to much less detailed (what linguists call "broad"). The purposes of the analysis are to determine how narrow or broad the transcript must be, what is represented, and how the transcript itself is formatted. For theoretical discussions related to transcribing, see Baker (1997); Green, Franquiz, and Dixon (1997); and Ochs (1979).

¹²Given the scope of work in this area, the citations were selected to show a range of perspectives that are currently being used to construct understandings of teaching-learning processes within educational settings. Some of these studies were conducted within education, while others were used as part of the theoretical basis of studies within education.

¹³This ethnographic research was conducted from 1991-1997. Five dissertations have been completed on data across years in this classroom, each providing an analysis of particular class essays or a whole-class analysis of essays. In addition, a number of articles have been written about life in this classroom by varying groups of authors. For a complete list of publications, please contact Judith Green (e-mail: green@education.ucsb.edu) or Carol Dixon (e-mail: dixon@education.ucsb.edu).

¹⁴We use these two terms, *hands on* and *minds on*, to represent a way of viewing such activities that is often discussed in science education literature.

REFERENCES

- Baker, C. (1997). Transcription and representation in literacy research. In J. Flood, S. B. Heath, & D. Lapp (Eds.), *Research on teaching literacy through the communicative and visual arts*. New York: Macmillan.
- Baker, C., & Luke, A. (Eds.). (1991). *Toward a critical sociology of reading pedagogy*. Amsterdam: John Benjamins.
- Bakhtin, M. (1981). *The dialogic imagination*. Austin: University of Texas Press. (Original work published 1935)
- Bakhtin, M. (1986). *Speech genres and other late essays*. Austin: University of Texas Press.
- Barsalou, L. W. (1991). Deriving categories to achieve goals. In G. H. Bower (Ed.), *The psychology of learning and motivation: Advances in research and theory* (Vol. 27, pp. 1-64). New York: Academic Press.
- Barsalou, L. W. (1992). *Cognitive psychology: An overview for cognitive scientists*. Hillsdale, NJ: Erlbaum.
- Bauman, R. (1986). *Story, performance, and event: Contextual studies of oral narrative*. Cambridge, England: Cambridge University Press.
- Bazerman, C. (1989). *Shaping written knowledge*. Madison: University of Wisconsin Press.
- Billig, M. (1987). *Arguing and thinking: A rhetorical approach to social psychology*. Cambridge, England: Cambridge University Press.

- Birdwhistell, R. (1977). Some discussion of ethnography, theory, and method. In J. Brockman (Ed.), *About Bateson: Essays on Gregory Bateson* (pp. 103–144). New York: Dutton.
- Bleicher, R. (1994). High school students presenting science: An interactional sociolinguistic analysis. *Journal of Research in Science Teaching*, 31, 697–719.
- Blom, J. P., & Gumperz, J. J. (1972). Social meaning in linguistic structures: Code switching in Norway. In J. Gumperz & D. Hymes (Eds.), *Directions in sociolinguistics*. New York: Holt, Rinehart & Winston.
- Bloome, D. (Ed.). (1987). *Literacy and schooling*. Norwood, NJ: Ablex.
- Bloome, D., & Bailey, F. (1991). Educational contexts of literacy. *Annual Review of Applied Linguistics*, 12, 49–70.
- Bloome, D., & Egan-Robertson, A. (1993). The social construction of intertextuality in classroom reading and writing lessons. *Reading Research Quarterly*, 28, 304–333.
- Bloome, D., & Green, J. L. (1984). Directions in sociolinguistic study of reading. In P. D. Pearson, M. Kamil, R. Barr, & P. Mosenthal (Eds.), *Handbook on research on reading*. New York: Longman.
- Briggs, C. (1986). *Learning how to ask: A sociolinguistic appraisal of the role of the interview in social science research*. Cambridge, England: Cambridge University Press.
- Carbaugh, D. (1996). *Situating selves: The communication of social identities in American scenes*. Albany: State University of New York Press.
- Carlsen, W. S. (1992). Closing down the conversation: Discouraging student talk on unfamiliar science content. *Journal of Classroom Interaction*, 27(2), 15–21.
- Carspecken, P. F. (1996). *Critical ethnography in educational research: A theoretical and practical guide*. New York: Routledge.
- Cazden, C. (1986). Classroom discourse. In M. Wittrock (Ed.), *The handbook for research on teaching* (pp. 432–463). New York: Macmillan.
- Cazden, C. (1988). *Classroom discourse: The language of teaching and learning*. Portsmouth, NH: Heinemann.
- Christie, F. (1995). Pedagogic discourse in the primary school. *Linguistics and Education*, 7, 221–242.
- Clark, A. (1993). *Associative engines: Connectionism, concepts, and representational change*. Cambridge, England: Cambridge University Press.
- Clark, A. (1997). *Being there: Putting brain, body, and world together again*. Cambridge, MA: MIT Press.
- Clark, H. H. (1996). *Using language*. Cambridge, England: Cambridge University Press.
- Cochran, J. (1997). What's "common" in a common curriculum: How course structure shapes disciplinary knowledge. *Journal of Classroom Interaction*, 32(2).
- Cole, M. (1996). *Culture in mind*. Cambridge, MA: Harvard University Press.
- Collins, J. (1987). Using cohesion analysis to understand access to knowledge. In D. Bloome (Ed.), *Literacy and schooling* (pp. 70–98). Norwood, NJ: Ablex.
- Cook-Gumperz, J. (Ed.). (1986). *The social construction of literacy*. New York: Cambridge University Press.
- Crawford, T., Chen, C., & Kelly, G. J. (1997). Creating authentic opportunities for presenting science: The influence of audience on student talk. *Journal of Classroom Interaction*, 32(2), 1–13.
- D'Andrade, R., & Strauss, C. (Eds.). (1992). *Human motives and cultural models*. Cambridge, England: Cambridge University Press.
- Del Rio, P., & Alvarez, A. (1995). Directivity: The cultural and educational construction of morality and agency. Some questions arising from the legacy of Vygotsky. *Anthropology and Education Quarterly*, 26, 384–409.
- Duran, R. (Ed.). (1995). Literacy among Latinos: Focus on school contexts [Special issue]. *Discourse Processes*, 19(1).
- Duranti, A., & Goodwin, C. (Eds.). (1992). *Rethinking context: Language as an interactive phenomenon*. Cambridge, England: Cambridge University Press.
- Edwards, D., & Potter, J. (1992). *Discursive psychology*. London: Sage.

- Edwards, V., & Furlong, A. (1978). *The language of the classroom: Meaning in classroom interaction*. London: Heinemann.
- Edwards, D., & Mercer, N. (1987). *Common knowledge: The development of understanding in the classroom*. New York: Falmer.
- Erickson, F. (1979). On standards of descriptive validity in studies of classroom activity (Occasional Paper #16). East Lansing, MI: Institute for Research on Teaching.
- Erickson, F. (1982). Taught cognitive learning in its immediate environment: A neglected topic in the anthropology of education. *Anthropology and Education Quarterly*, 13(2), 149-179.
- Erickson, F. (1986). Qualitative research. In M. Wittrock (Ed.), *The handbook for research on teaching* (pp. 119-161). New York: Macmillan.
- Erickson, F., & Shultz, J. (1981). When is a context? Some issues and methods in the analysis of social competence. In J. Green & C. Wallat (Eds.), *Ethnography and language in educational settings* (pp. 147-160). Norwood, NJ: Ablex.
- Ervin-Tripp, S. (1972). On sociolinguistic rules: Alternation and co-occurrence. In J. Gumperz & D. Hymes (Eds.), *Directions in sociolinguistics: The ethnography of communication*. New York: Holt, Rinehart & Winston.
- Evertson, C., & Green, J. L. (1986). Observation as inquiry and method. In M. Wittrock (Ed.), *The third handbook for research on teaching* (pp. 162-213). New York: Macmillan.
- Fairclough, N. (1989). *Language and power*. London: Longman.
- Fairclough, N. (1992). *Discourse and social change*. Cambridge, England: Polity Press.
- Fairclough, N. (1993). Critical discourse analysis and the marketization of public discourse: The universities. *Discourse and Society*, 4, 122-169.
- Fairclough, N. (1995). *Critical discourse analysis*. London: Longman.
- Fernie, D., Davies, B., Kantor, R., & McMurray, P. (1993). Becoming a person in the preschool: Creating integrated gender, school culture, and peer culture positionings. *Qualitative Studies in Education*, 6, 95-110.
- Floriani, A. (1993). Negotiating what counts: Roles and relationships, texts and contexts, content and meaning. *Linguistics and Education*, 5, 241-274.
- Frake, C. O. (1977). Plying frames can be dangerous: Some reflections on methodology in cognitive anthropology. *Quarterly Newsletter of the Institute for Comparative Human Development*, 3, 1-7.
- Garfinkel, H., Lynch, M., & Livingston, E. (1981). The work of discovering science construed with materials from the optically discovered pulsar. *Philosophy of the Social Sciences*, 11, 131-158.
- Gaskin, S., Miller, P. J., & Corsaro, W. A. (1993). Theoretical and methodological perspectives in the interpretive study of children. In W. A. Corsaro & P. J. Miller (Eds.), *Interpretive approaches to children's socialization*. San Francisco: Jossey-Bass.
- Gee, J. P. (1992). *The social mind: Language, ideology, and social practice*. New York: Bergin & Garvey.
- Gee, J. P. (1996). *Social linguistics and literacies: Ideology in discourses* (2nd ed.). London: Taylor & Francis.
- Gee, J. P., Hull, G., & Lankshear, C. (1996). *The new work order: Behind the language of the new capitalism*. Boulder, CO: Westview.
- Gee, J. P., Michaels, S., O'Connor, C. (1992). Discourse analysis. In M. D. LeCompte, W. Millroy, & J. Preissle (Eds.), *Handbook of qualitative research in education* (pp. 227-291). New York: Academic Press.
- Geertz, C. (1983). *Local knowledge*. New York: Basic Books.
- Giddens, A. (1990). *Central problems in social theory: Action, structure and contradiction in social analysis*. Los Angeles: University of California Press.
- Gilmore, P., & Glatthorn, A. (1982). *Children in and out of school*. Washington, DC: Center for Applied Linguistics/Ablex.
- Goffman, I. (1981). *Forms of talk*. Philadelphia: University of Pennsylvania Press.
- Golden, J. (1990). *Constructing a text: Narrative symbol in childhood literature*. Berlin: Aldine de Gruyter.

- Goodwin, C. (1981). *Conversational organization: Interaction between speakers and hearers*. New York: Academic Press.
- Goodwin, C., & Heritage, J. (1990). Conversation analysis. *Annual Review of Anthropology*, 19, 283–307.
- Goodwin, M. H. (1990). *He-said-she-said: Talk as social organization among Black children*. Bloomington: Indiana University Press.
- Green, J. (1983). Teaching as a linguistic process: A state of the art. In E. Gordon (Ed.), *Review of research in education* (Vol. 10, pp. 151–252). Washington, DC: American Educational Research Association.
- Green, J., & Bloome, D. (1997). Ethnography and ethnographers of and in education: A situated perspective. In J. Flood, S. Brice Heath, & D. Lapp (Eds.), *Research on teaching literacy through the communicative and visual arts* (pp. 181–202). New York: Macmillan.
- Green, J., & Bloome, D. (1983). Ethnography and reading: Issues, approaches, criteria and findings. In *Thirty-second yearbook of the National Reading Conference* (pp. 6–30). Rochester, NY: National Reading Conference.
- Green, J., & Dixon, C. (1993). Talking knowledge into being: Discursive practices in classrooms. *Linguistics and Education*, 5, 231–239.
- Green, J., Franquiz, M., & Dixon, C. (1997). The myth of the objective transcript. *TESOL Quarterly*, 31, 172–176.
- Green, J., & Harker, C. (Eds.). (1988). *Multiple perspective analyses of classroom discourse*. Norwood, NJ: Ablex.
- Green, J. L., & Harker, J. O. (1992). Gaining access to learning: Controversial, social, and cognitive demands of instructional conversation. In L. C. Wilkinson (Ed.), *Communicating in the classroom* (pp. 183–222). New York: Academic Press.
- Green, J., & Wallat, C. (1981). Mapping instructional conversations: A sociolinguistic ethnography. In J. Green & C. Wallat (Eds.), *Ethnography and language in educational settings* (pp. 161–205). Norwood, NJ: Ablex.
- Gumperz, J. J. (1982a). *Discourse strategies*. Cambridge, England: Cambridge University Press.
- Gumperz, J. J. (Ed.). (1982b). *Language and social identity*. Cambridge, England: Cambridge University Press.
- Gumperz, J. (1986). Interactional sociolinguistics. In J. Cook-Gumperz (Ed.), *The social construction of literacy* (pp. 45–68). New York: Cambridge University Press.
- Gumperz, J. J. (1992). Contextualization and understanding. In A. Duranti & C. Goodwin (Eds.), *Rethinking context: Language as an interactive phenomenon* (pp. 229–252). Cambridge, England: Cambridge University Press.
- Gumperz, J. J., & Levinson, S. C. (Eds.). (1996). *Rethinking linguistic relativity*. Cambridge, England: Cambridge University Press.
- Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. London: Longman.
- Hanks, W. F. (1990). *Referential practice: Language and lived space among the Maya*. Chicago: University of Chicago Press.
- Hanks, W. F. (1995). *Language and communicative practices*. Bolder, CO: Westview Press.
- Harkness, S., Super, C. M., & Keefer, C. H. (1992). Learning how to be an American parent: How cultural models gain directive force. In R. D'Andrade & C. Strauss (Eds.), *Human motives and cultural models* (pp. 163–178). Cambridge, England: Cambridge University Press.
- Harre, R., & Gillett, G. (1994). *The discursive mind*. Thousand Oaks, CA: Sage.
- Heap, J. (1980). What counts as reading. Limits to certainty in assessment. *Curriculum Inquiry*, 10, 265–292.
- Heap, J. (1991). A situated perspective on what counts as reading. In C. Baker & A. Luke (Eds.), *Toward a critical sociology of reading pedagogy*. Philadelphia: John Benjamins.
- Heath, S. (1982). Ethnography in education: Defining the essential. In P. Gilmore & A. Glathorn (Eds.), *Children in and out of school* (pp. 33–58). Washington, DC: Center for Applied Linguistics.

- Heritage, J. (1984). *Garfinkel and ethnomethodology*. Oxford, England: Basil Blackwell.
- Hicks, D. (1995). Discourse, learning, and teaching. In M. W. Apple (Ed.), *Review of research in education* (Vol. 21, pp. 49–95). Washington, DC: American Educational Research Association.
- Hofstadter, D. R. (1997). *Le ton beau de Marot: In praise of the music of language*. New York: Basic Books.
- Holland, D., & Quinn, N. (Eds.). (1987). *Cultural models in language and thought*. Cambridge, England: Cambridge University Press.
- Hutchins, E. (1995). *Cognition in the wild*. Cambridge, MA: MIT Press.
- Hymes, D. (1974). *Foundations of sociolinguistics*. Philadelphia: University of Pennsylvania Press.
- Hymes, D. (1996). *Ethnography, linguistics, narrative inequality: Towards an understanding of voice*. London: Taylor & Francis.
- Hymes, D. (1977). Critique. *Anthropology & Education Quarterly*, 8, 91–93.
- Ivanic, R. (1994). I is for interpersonal: Discoursal construction of writer identities and the teaching of writing. *Linguistics and Education*, 6(1), 3–15.
- John-Steiner, V., Panofsky, C. P., & Smith, L. W. (Eds.). (1994). *Sociocultural approaches to language and literacy: An interactionist perspective*. Cambridge, England: Cambridge University Press.
- Kantor, R., Green, J., Bradley, M., & Lin, L. (1992). The construction of schooled repertoire: An interactional sociocultural perspective. *Linguistics and Education*, 4, 131–172.
- Kantor, R., Miller, S., & Fernie, D. (1992). Diverse paths to literacy in a preschool classroom: A sociocultural perspective. *Reading Research Quarterly*, 27, 185–201.
- Kelly, G. J., & Crawford, T. (1997). An ethnographic investigation of the discourse processes of school science. *Science Education*, 81, 533–559.
- Kelly, G. J., & Green, J. (1997). What counts as science in high school and college classrooms? Examining how teachers' knowledge and classroom discourse influence opportunities for learning science. *Journal of Classroom Interaction*, 32(2), 1–3.
- Knorr Cetina, K. (1992). The couch, the cathedral, and the laboratory: On the relationship between experiment and laboratory in science. In A. Pickering (Ed.), *Science as practice and culture* (pp. 113–137) Chicago: University of Chicago Press.
- Kress, G. (1996). *Before writing: Rethinking paths into literacy*. London: Routledge.
- Kress, G., & van Leeuwen, T. (1996). *Reading images: The grammar of visual design*. London: Routledge.
- Labov, W. (1969). *The logical of non-standard English* (Georgetown Monographs on Language and Linguistics). Washington, DC: Georgetown University Press.
- Latour, B. (1991). *We have never been modern*. Cambridge, MA: Harvard University Press.
- Latour, B., & Woolgar, S. (1986). *Laboratory life: The construction of scientific facts*. Princeton, NJ: Princeton University Press.
- Lave, J. (1988). *Cognition in practice*. Cambridge, England: Cambridge University Press.
- Lave, J. (1996). Teaching, as learning, in practice. *Mind, Culture, and Activity*, 3, 149–164.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, England: Cambridge University Press.
- Lee, D. (1992). *Competing discourses: Perspective and ideology in language*. London: Longman.
- Lemke, J. L. (1990). *Talking science*. Norwood, NJ: Ablex.
- Leont'ev, A. N. (1978). *Activity, consciousness, and personality*. Englewood Cliffs, NJ: Prentice Hall.
- Leont'ev, A. N. (1981). The problem of activity in psychology. In J. V. Wertsch (Ed.), *The concept of activity in Soviet psychology* (pp. 37–71). Armonk, NY: M. E. Sharpe.
- Levinson, S. (1983). *Pragmatics*. Cambridge, England: Cambridge University Press.
- Levinson, S. (1996). Relativity in spatial conception and description. In J. I. Gumperz & S. C. Levinson (Eds.), *Rethinking linguistic relativity* (pp. 177–202). Cambridge, England: Cambridge University Press.

- Lin, L. (1993). Language of and in the classroom: Constructing the patterns of social life. *Linguistics and Education*, 5, 2367–2410.
- Luke, A. (1995). Text and discourse in education: An introduction to critical discourse analysis. In M. W. Apple (Ed.), *Review of research in education* (Vol. 21, pp. 3–48). Washington, DC: American Educational Research Association.
- Lynch, M. (1993). *Scientific practice and ordinary action: Ethnomethodology and social studies of science*. Cambridge, England: Cambridge University Press.
- McDermott, R. P. (1976). *Kids made sense: An ethnographic account of the interactional management of success and failure in one first-grade classroom*. Unpublished doctoral dissertation, Stanford University.
- Mehan, H. (1978). Structuring school structure. *Harvard Educational Review*, 1, 32–64.
- Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge, MA: Harvard University Press.
- Mishler, E. G. (1986). *Research interviewing: Context and narrative*. Cambridge, MA: Harvard University Press.
- Mishler, E. G. (1990). Validation in inquiry-guided research: The role of exemplars in narrative studies. *Harvard Educational Review*, 60, 415–442.
- Mitchell, C. J. (1984). Typicality and the case study. In R. F. Ellens (Ed.), *Ethnographic research: A guide to general conduct* (pp. 238–241). New York: Academic Press.
- Moje, E. (1997). Exploring discourse, subjectivity, and knowledge in chemistry class. *Journal of Classroom Interaction*, 1, 35–44.
- Myers, G. (1992). *Writing biology: Texts in the social construction of scientific knowledge*. Madison: University of Wisconsin Press.
- Ochs, E. (1979). Transcription as theory. In E. Ochs & B. Schieffelin (Eds.), *Developmental pragmatics*. New York: Academic Press.
- Ochs, E. (1983). From feelings to grammar: A Samoa case study. In B. Schieffelin & E. Ochs (Eds.), *Language socialization across cultures*. Cambridge, England: Cambridge University Press.
- Ochs, E. (1996). Linguistic resources for socializing humanity. In J. J. Gumperz & S. C. Levinson (Eds.), *Rethinking linguistic relativity* (pp. 407–437). Cambridge, England: Cambridge University Press.
- Palmer, G. B. (1996). *Toward a theory of cultural linguistics*. Austin: University of Texas Press.
- Philips, S. U. (1972). Participant structures and communicative competence: Warm Springs children in community and classroom. In C. Cazden, V. John, & D. Hymes (Eds.), *Functions of language in the classroom*. New York: Teachers College Press.
- Philips, S. U. (1974). *The invisible culture*. New York: Teachers College Press.
- Pickering, A. (1995). *The mangle of practice: Time, agency, and science*. Chicago: University of Chicago Press.
- Psathas, G. (1995). *Conversation analysis*. Thousand Oaks, CA: Sage.
- Rieber, R. W., & Carton, A. S. (1987). *The collected works of L. S. Vygotsky: Vol. 1. Problems of general psychology*. New York: Plenum.
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. New York: Oxford University Press.
- Rogoff, B., & Lave, J. (Eds.). (1984). *Everyday cognition: Its development in social context*. Cambridge, MA: Harvard University Press.
- Rosebery, A. S., Puttick, G. M., & Bodwell, M. B. (1996). "How much light does a plant need?": *Questions, data, and theories in a second grade classroom*. Portsmouth, NH: Heinemann.
- Santa Barbara Classroom Discourse Group. (1992). Constructing literacy in classrooms: Literate action as social accomplishment. In H. Marshall (Ed.), *Redefining student learning: Roots of educational change* (pp. 119–150). Norwood, NJ: Ablex.
- Scollon, R., & Scollon, S. B. K. (1981). *Narrative, literacy, and face in interethnic communication*. Norwood, NJ: Ablex.

- Searle, J. (1969). *Speech acts: An essay in the philosophy of language*. Cambridge, England: Cambridge University Press.
- Shapin, S., & Schaffer, S. (1985). *Leviathan and the air-pump: Hobbes, Boyle and the experimental life*. Princeton, NJ: Princeton University Press.
- Shore, B. (1996). *Culture in mind: Cognition, culture, and the problem of meaning*. New York: Oxford University Press.
- Sinclair, J. M., & Coulthard, M. (1975). *Towards an analysis of discourse: The English used by teachers and pupils*. Oxford, England: Oxford University Press.
- Souza Lima, E. (1995). Culture revisited: Vygotsky's ideas in Brazil. *Anthropology and Education Quarterly*, 26, 443-457.
- Sperber, D., & Wilson, D. (1986). *Relevance: Communication and cognition*. Oxford, England: Blackwell.
- Spindler, G., & Spindler, L. (Eds.). (1987). *Interpretive ethnography of education: At home and abroad*. Hillsdale, NJ: Erlbaum.
- Spradley, I. (1980). *Participant observation*. New York: Holt, Rinehart & Winston.
- Strauss, C. (1992). What makes Tony run? Schemas as motives reconsidered. In R. D'Andrade & C. Strauss (Eds.), *Human motives and cultural models* (pp. 197-224). Cambridge, England: Cambridge University Press.
- Strike, K. (1974). On the expressive potential of behaviorist language. *American Educational Research Journal*, 11, 103-120.
- Stubbs, M. (1983). *Discourse analysis: The sociolinguistic analysis of natural language*. Chicago: University of Chicago Press.
- Toolan, M. (1996). *Total speech: An integrational linguistic approach to language*. Durham, NC: Duke University Press.
- Toulmin, S. (1970). Does the distinction between normal and revolutionary science hold water? In I. Lakatos & A. Musgrave (Eds.), *Criticism and the growth of knowledge* (pp. 39-47). Cambridge, England: Cambridge University Press.
- Toulmin, S. (1972). *Human understanding: Vol. 1. The collective use and evolution of concepts*. Princeton, NJ: Princeton University Press.
- Tuyay, S., Florian, A., Yeager, B., Dixon, C., & Green, J. (1995). Constructing an integrated, inquiry-oriented approach in classrooms: A cross case analysis of social, literate and academic practices. *Journal of Classroom Interactions*, 30(4), 1-15.
- Tuyay, S., Jennings, L., & Dixon, C. (1995). Classroom discourse and opportunities to learn: An ethnographic study of knowledge construction in a bilingual third-grade classroom. *Discourse Processes*, 10, 75-100.
- Ungerer, F., & Schmid, H. J. (1996). *An introduction to cognitive linguistics*. London: Longman.
- van Dijk, T. (1972). *Some aspects of text grammars*. The Hague: Mouton.
- van Dijk, T. (1977). *Text and context*. London: Longman.
- van Dijk, T. (Ed.). (1985). *Handbook of discourse analysis: Vol. 1. Disciplines of discourse*. New York: Academic Press.
- van Dijk, T. (1993). Principles of critical discourse analysis. *Discourse and Society*, 4, 249-283.
- Volosinov, V. (1973). *Marxism and the philosophy of language*. New York: Seminar.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wertsch, J. V. (Ed.). (1981). *The concept of activity in Soviet psychology*. Armonk, NY: M. E. Sharpe.
- Wertsch, J. V. (1991). *Voices of the mind: A sociocultural approach to mediated action*. Cambridge, MA: Harvard University Press.
- Whiting, J., & Whiting, B. (1959). Contributions of anthropology to methods of studying child rearing. In P. Mussen (Ed.), *Handbook of research methods in child development*. New York: Wiley.

- Wieder, D. L., & Pratt, S. (1990). On being a recognizable Indian among Indians. In D. Carbaugh (Ed.), *Cultural communication and intercultural contact* (pp. 45–64). Hillsdale, NJ: Erlbaum.
- Wilkinson, L. C. (Ed.). (1992). *Communicating in the classroom*. New York: Academic Press.
- Wittgenstein, K. (1953). *Philosophical investigations*. New York: Macmillan.
- Wootton, A. (1989). Remarks on the methodology of conversation analysis. In D. Roger & P. Bull (Eds.), *Conversation: An interdisciplinary perspective* (pp. 238–258). Clevedon, England: Multilingual Matters.

Manuscript received June 1, 1997

Accepted December 31, 1997