PERSPECTIVES ON SOCIALLY SHARED COGNITION

E D I T E D
BY
**LAUREN B. RESNICK,
JOHN M. LEVINE,**
AND
STEPHANIE D. TEASLEY

LEARNING RESEARCH
AND DEVELOPMENT CENTER

UNIVERSITY OF PITTSBURGH

American Psychological Association
Washington, DC

1991

Janet, P. (1928) *De l'angoisse a l'extase: Etudes sur les croyances et les sentiments: Vol. 2 Les sentiments fondamentaux* [From anguish to ecstasy: Studies in beliefs and feelings. Vol. 2. Basic feelings]. Paris: Librairie Felix Alcan.

Leont'ev, A. N. (1959). *Problemy razvitiya psikhiki* [Problems in the development of mind]. Moscow: Moscow University Press.

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.

Marx. K. & Engels, F. (L. S. Feuer, Trans.). (1959). The German ideology. In L. S. Feuer (Ed.), *Marx and Engels: Basic writings on politics and philosophy*. Garden City, NY: Doubleday. (Original work published 1845)

Rogoff, B . & Wertsch, J. V. (Eds.). (1984). *Children's learning in the "zone of proximal development."* San Francisco: Jossey-Bass.

Tharp, R. G . & Gallimore, R. (1988). *Rousing minds to life: Teaching, learning, and schooling in social context*. Cambridge, England: Cambridge University Press.

Voloshinov, V. N. (1973). *Marxism and the philosophy of language* (L. Matejka & I. R. Titunik, Trans.). New York: Seminar Press.

Vygotsky, L. S. (1934) *Myshlenie i rech': Psikhologicheskie issledovaniya* [Thinking and speech: Psychological investigations]. Moscow and Leningrad: Gosudarstvennoe Sotsial'no-Ekonomicheskoe Izdatel'stvo.

Vygotsky, L. S. (1960). *Razvitie vysshykh psikhicheskikh funktsii* [The development of higher mental functions]. Moscow: Izdatel'stvo Akademii Pedagogicheskikh Nauk.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1981a). The instrumental method in psychology. In J. V. Wertsch (Ed.), *The concept of activity in Soviet psychology* (pp. 134-143). Armonk, NY: Sharpe.

Vygotsky, L. S. (1981b). The genesis of higher mental functions. In J. V. Wertsch (Ed.), *The concept of activity in Soviet psychology* (pp. 144-188). Armonk, NY: Sharpe.

Vygotsky, L. S., & Luria, A. R. (1930). *Etyudy po istorii povedeniya: Obez'yana, primitiv, rebenok* [Essays on the history of behavior: Ape, primitive, child]. Moscow and Leningrad: Gosudarstvennoe Izdatel'stvo.

Wertsch, J. V. (1985). *Vygotsky and the social formation of mind*. Cambridge, MA: Harvard University Press.

Wertsch, J. V. (1991). *Voices of the mind: A sociocultural approach to mediated action*. Cambridge, MA: Harvard University Press.

Wertsch, J. V., & Minick, N. (1990). Negotiating sense in the zone of proximal development. In M. Schwebel, C. A. Maher, & N. S. Fagley (Eds.), *Promoting cognitive growth over the life span* (pp. 71-88). Hillsdale, NJ: Erlbaum.

Wertsch, J. V., & Youniss, J. (1987). Contextualizing the investigator: The case of developmental psychology. *Human Development, 30,* 18-31.

CHAPTER 6

"IT'S ABOUT WINNING!" THE LANGUAGE OF KNOWLEDGE IN BASEBALL

SHIRLEY BRICE HEATH

Cartoonist Charles Schulz knows a lot about the world but not much about the language of young players on a baseball team. When Lucy taunts Charlie Brown about his pitching or batting and their conflict becomes a one-on-one confrontation, youngsters who play Little League baseball know that is not the way "real" baseball players talk to each other. Real teams talk not about losing but about winning; the dominant view is that the game will always get better and, as it does, so will the players. In their speech and actions, Little League baseball teams gear themselves to win.

This chapter will address the role of language—specifically problem-solving narratives—in the natural learning setting of Little League baseball. As part of a larger study of the language of youngsters engaged in activities sponsored by neighborhood-based organizations, these data came from the middle-class players and coach of a Little League baseball team in an urban area of northern California during the 1987–88 season.

The goal of my work, as of any anthropological fieldwork within an institution or society, is to illustrate the rules, values, and expected behaviors within overlapping contexts that give rise to particular sets of activities. Data for this study came from artifactual and documentary evidence (e.g., letters to parents from the coach), extended open-ended interviews throughout the season with players and coach, observations through a full seasonal cycle, and follow-up stimulated-recall interviews (conducted during the viewing of videotapes of past key games).

This work may be compared with that of anthropologist Gary Fine (1987), who documented several Little League baseball teams throughout their full season. Although Fine's purpose was not to record the teams' language, the portions of transcripts he provided demonstrated structures and functions of coach and player talk that parallel the language of this study. The integration of language (and other symbolic systems, such as dress and posture) with the stated ethos and philosophy behind the game is summarized by Shore (1989), who argues:

> The pervasive asymmetries of baseball constitute the ritual enactment of a conversation. The determinate and closed are counterpoised to the contingent and free in a dialogue that engages in a common discourse our communitarian and atomistic visions of who we are. (p. 23)

For the anthropologist studying everyday behavior, any activity of a given moment connects within a multiply governed system of age- and gender-related habits, institutional values, and situated meanings that are at once spontaneous, adaptive, and historically established. The purpose of the fieldwork reported in this study was to describe the ideals that surrounded learning within team life and to capture—primarily through detailing the language of activities—manifestations of the environment of learning that the specialized domain of Little League baseball provided.

Research on learning and teaching has in the past five years turned increasingly to the study of *natural* learning—that which takes place without the specific designations of teacher and student and outside the framework of a curriculum established by parties beyond both student and teacher. Some recent research in cognitive science and language education has supported the notion that reasoning, problem-solving, arguing for a plan, and creating coherent narratives come naturally within many everyday activities. Researchers frequently suggest that teachers need to move beyond the formal confines of the curriculum to parallel, build on, and expand the content and forms of everyday reasoning. However, teaching, and any activity labeled *pedagogical practice*, depends heavily on identification of subject matter and skills to be taught, as well as the strict segregation of roles by agent and recipient of transmission. Moreover, learner progress, especially within formal education, is determined by the display capabilities of the learner, who must provide evidence of matching a path of development laid down by the

teacher or authorities beyond the school (e.g., testmakers, school boards, curriculum developers). The reductionist dichotomy that usually divides teaching from learning thus sets aside and often specifically deprecates the practices of everyday reasoning as well as the knowledge and skills brought to school tasks from experiences beyond the school (Hedegaard, 1986; Wertsch, 1985).

Those who have studied everyday reasoning have thus faced not only the derision of educators who downgrade everyday learning, but also the challenge of using new research approaches, methods, and settings of research. Unlike earlier laboratory experiments in which cognitive psychologists focused on the syntactic, context-free logic of reasoning, natural learning sites shape the semantic and situational constraints of reasoning in basic ways. Identifying and solving problems, moving from the known to the unknown, and creating meaning through reasoning analogically mark everyday reasoning in situations that integrate individuals into teamwork and depend on guided learning in mixed-age groupings.

Baseball, sometimes disparagingly characterized as a game in which sixteen people stand around and wait for two people to do something, provides abundant occasions for players to put their problem solving and creating of possible worlds into words—usually in the form of "what-if," "if-then," or "did-you-see" narratives. I have divided my discussion in this chapter into two parts: a description of this study's physical setting and motivational context (or ideational history) for the Little League baseball team (composed of boys between the ages of 9 and 12), and an analysis of the language genres that dominate the team's communications. Key features of situations for learning within the team offer direct experimentation and observation by the boys that result in their narratives of hypothetical situations. The coach's philosophy led him to create a fantasy world drama whose scripts demanded that the boys reason and problem solve *as* big-league players. The baseball season thus became one long drama as *play* in which the boys worked to suspend or erase their real-world features of inexperience and youth. The life-as-drama metaphor pervades anthropological studies of both public and private rituals. Goffman's (1974) theory of frame analysis underlies numerous studies of dance and games across cultures. Within drama, as in daily interactions, individuals avail themselves of certain options and forgo others; they operate within a collusive frame to maintain the definition of the situation and their position in it.

Anthropologist Gregory Bateson (1956) characterized *play* by the flexibility, expanded roles, and rules of learning it provides:

> An individual learns that there are all sorts and categories of behavior . . . learns or acquires a new view, partly flexible and partly rigid, which is introduced into life when he realizes that behavior can, in a sense, be set to a logical type or style. It is not the learning of the particular style that you are playing at, but the fact of stylistic flexibility and the fact that the choice of style or role is related to the frame and context of behavior. (pp. 148–149)

Mastery of roles for these boys thus followed from practice of skills and verbal manipulation (e.g., what-if scenes, secret language, and narratives of famous plays or players) of the possible frames or scenes that called forth particular roles.

ON THE FIELD

The team I studied was one of some 20 in a town of approximately 40,000 residents—most of whom live in households where one or more adults hold a professional position. The ethos of the town is one of an acceptance of education as a fundamental right and opportunity for honing skills and attitudes necessary for future career success. The town offers multiple types of neighborhood-based organizations, boasts more libraries per capita than any other city its size in California, and supports consistent news coverage of the athletic and artistic activities of its youth. The coach for Campos, the team studied here, was enrolled as a graduate student in business school after having completed a career in military aviation.

Players signed up for the team through the city recreation center, and youngsters in the same area of town ended up on one of 20 or more teams that practiced after school and on weekends near their neighborhoods. In mid-March, the coach of Campos sent the first of three newsletters to the players and their parents, telling them of his philosophy and of his choice to hold two "good two-hour practices" each week. The coach closed his first newsletter, which contained the practice schedule for the season, by advising the players to run on their "days off" to stay in shape. In a subsequent team letter, the coach thanked parents for their support and outlined his goals for the team. The players had heard these goals at their first practice: (a) to have a good time, (b) to learn and practice teamwork and sportsmanship, and (c) to learn a little more about the game of baseball. The coach emphasized the first two goals as most important and urged parents to let him know if their sons were not having fun or feeling part of the team. The team objective was "to win games as long as everyone is having a good time." The coach elaborated this point:

> Having a good time usually means being in the game. Most games go for five innings, only rarely does a . . . contest go all six innings. During a five inning game with 13 players, the average playing time is under 3.5 innings. For a four inning game, the average playing time is less than .t innings. (coach's newsletter, April 28, 1988)

He then outlined in the newsletter his plan that all boys would play at least two innings, and that he would not start the nine strongest boys but would try to field a strong team throughout the scheduled six innings. Those boys who would play the most over the season would be those who responded to coaching, worked for the team, tried hard, and consistently exhibited good sportsmanship.

He urged some practice on their own, offering hints about ways the boys could practice in their home driveways. He closed the letter by requesting that parents "release" their sons to the team before the game and let them "do their own thing" without parental interference. The letter closed with the "Little League Pledge" from the official rule book: "I trust in God. I love my country and will respect its law. I will play fair and strive to win. But win or lose, I will always do my best" (coach's newsletter, April 28, 1988). The coach made the boys memorize the team's three goals and asked them to call these to mind at critical points during the season. He explained his premise in coaching to me in the following way: "Players and coach enter a fantasy world and pretend they are big-league players . . . players are not kids" (personal communication, December 27, 1988). His requests of the players were usually couched in terms of "How would they do this in the major leagues?" (personal communication, December 27, 1988). For example, this was the prompt that got the boys to tuck in their shirttails, accept questionable calls by umpires, and treat seriously the array of special signals the coach and players worked out.

The focus was on prototypes or generic categories of behavior for major league players, catchers, batters, and "good sports." The coach rarely called attention to specific features or behaviors that applied only to certain positions (e.g., catcher, pitcher, or shortstop). Because everyone on the team expected everyone else to succeed in hitting, throwing, and catching the ball and running fast, the lessons of practices applied to *all* players, not simply to those who might receive designation as *the* catcher, pitcher, or first baseman. In interviews, team members reflected their understanding of this approach by repeatedly naming "flexibility," "lots of action for everyone," and "creativity once you've got the basics" as the most appealing aspects of baseball.

The models or experts to whom the boys linked their own behaviors lay beyond the coach and the vagaries of team membership; they rested in the collective knowledge of team members as they read about baseball, watched games on television, or heard them on the radio. Frequent reminders made clear who the boys were: "We're professionals," "We're card-carrying members of a group," "We're all in it together." The coach and team kept a number of secrets from parents: special cheers, idiosyncratic terms, and hand and verbal signals to put certain strategies (e.g., bunting) into place during games. The coach and his players referred to balls that were easy to hit or easy to catch as "marshmallows." During games, the team and the coach would remind batters to "wait for a marshmallow." Frequent use of this and other terms (e.g., "dig" to refer to a low pitch) marked the inclusiveness of the team at games; neither their own parents nor members of the other team knew the meanings of the boys' cheers and technical terms.

The coach's self-portrayal emerged from a sense of what he was *not*: He made such statements as "Coaches must not see themselves as teachers," "Sports is not a schoolhouse," and "Don't teach about it, but play and learn." Experi-

mentation and direct engagement with "basics of the game, and some of the fine points" set the foundation for "practical logic," deciding the "rationale," and "learning from each others' mistakes." The coach urged his players to "spectate knowingly" and estimated that 80% of his coaching time was spent in "stroking to establish a creditable authority and handing out baseballs and praise," whereas 20% of his time with the players went to reminding either individuals or the team as a whole that they were "not doing what they were capable of" and asking youngsters to show how they could improve (personal communication, December 27, 1988).

The coach warned the youngsters, "One thing I will not tolerate is quiet on the field." The boys cheered on their teammates before, during, and after the game. The coach used mistakes as models, sometimes asking the player who had made an error to replay verbally what he had done and to work with team members to figure out how the mistake occurred and which alternative approaches might have helped avoid the error. The coach called these "low-cost lessons," pointing out repeatedly that "bad days" happened, and when they did, the important move was to "go do something else and don't worry about it." The coach fostered a sense of participation in "the real thing" by using technical vocabulary (e.g., *RBI* for runs batted in, *ERA* for earned run average), approaching specifics of the game with an analysis of the physics of movement (e.g., predicting the course of grounders over rough terrain or the effect of a swing in which the bat hit just the top of the ball), and encouraging team members to reason through events in oral exchanges. The coach often reminded team members and parents alike of "streaks and slumps" in learning and urged the players to acknowledge the importance of "toughing out" certain "bad days" (personal communication, December 27, 1988).

Interviews with players, as well as observations of team activities and analyses of audiotapes and videotapes of practice and games, indicated that players saw nothing out of the ordinary in this coach's approach. Team members who had played on other teams identified only the order of practice as a distinguishing feature of different coaches with whom they had worked. During practice, when the coach called out for them to recapitulate verbally what they were doing, what they saw, or what went wrong, team members complied without indicating that this request was out of the ordinary. When he sometimes openly announced that he called for these analyses to see if the team was alert, the boys simply nodded and waited for the next play with his follow-up call for analysis. Interviews indicated that they viewed "looking out," "keeping track of what's going on," and "knowing how to figure strategies" as natural parts of team expectations. Team members, when asked why they participated in after-school activities such as Little League baseball, always responded with phrases such as "participation," "lots of activity," "you don't get bored," and "the promise of being able to do lots of things." But they also pointed out the importance of talk and the link of

talk to action. One player contrasted classroom learning and baseball in the following manner:

> In baseball, they talk about stuff that more people, like, don't know about. They talk about like, I know how to do things, but sometimes I don't know. Like, to be in the batter's box, one of the coaches told me to stand back a little more. Like I know how to do things, but not *how to*, so it's more fun to play baseball also because you are active, and there's fun to do baseball moving around and talk all the time. Like in school, you're quiet all the time. In baseball you can talk all you want.
>
> He taught us to get grounders, like, plant our feet down like this and move down. We wouldn't just be, like, just learning; he actually has us do that, and he actually gives us ground balls. Like in teaching, they just tell you how to do it. (Player Interview C, January, 1989)

This player's struggle with the meaning of "knowing *how* to do things" seems to indicate that the *talk*—the giving of a direct recommendation or rule—translated for him into improved play, as well as flexibility gained through individual experience with the most obvious parts of the game, such as running, batting, and catching.

Although the players saw no particular distinguishing features of this coach's approach, they were alert to distinctions between the language of coaching and that of teaching. When asked how they would compare their learning through athletic experiences with other kinds of learning, all made the immediate contrast with their school (and not with piano lessons, Sunday School, Hebrew School, or other out of school activities). They divided the talk of the coach into "pep talks" and "disciplinary talk." The former (which the boys estimated to be about 80% of the coach's speech) urged the boys to "do their best" and the latter talked about "what's been going wrong." This differentiation between the personalized nature of the coach's talk about improvement (e.g., through the use of personal pronouns such as *their*) and the depersonalized nature of talk about negative events and outcomes (e.g., through the use of impersonal pronouns such as *what*) also showed up in the actual use of pronouns during talks on the field. Pep talks abounded with personal pronouns and proper names; disciplinary talk centered on activities, events, and answers to queries like "*What* went wrong here?" or "*How* did that happen?"

NARRATIVES

Multi-turn talk during practice fell into two primary categories. The first centered on problem solving narratives in which the coach and the boys cooperated to provide an "eventcast" of activities currently underway or projected to occur in the future. The second was a question-and-answer series focused on reflections, restatement of rules, and reanalysis of prior plays.

Eventcasts as Sociodramatic Play

Eventcasts constitute a genre of narratives that outline the features of an action either while it is underway or before it is to occur. The sequencing of the event gives the basic shape to these narratives. This feature is most evident in commentaries that accompany action in process; such commentaries are unscripted in that what is said depends on the unfolding of the actions in progress (Crystal & Davy, 1969). However, in addition to the sequencing of these actions, speakers interlace eventcasts with explication of specific features of roles, individual actors, and conditions of particular events within each episode (Heath, 1986). Perhaps the most widely familiar example of eventcast is sports announcer talk (SAT), the running commentary that radio and television announcers give of a game that is under way (Ferguson, 1983). As in the following examples, one or two sentences of SAT can trigger immediate recognition of this genre as distinctive from news reports, conversation, or even an after-game wrap-up:

1. Pitch to Rob
   one and one
   swing and pop-up foul

2. Tim on at second
   planning to get this one
   close one at third

3. Over at third is Bobby

4. Rob, *the guy who's always awake at practice*, heads out to center-field. . . .

5. One and one [one ball, one strike as "the count"]
   two for three [two hits, three times at bat as player's record]
   three to one [three runs, one run as score]

This register carries specific syntactic features such as those illustrated above: simplification (1 and 2—deletion of copula and sentence initial nominals); sentence inversions (3); heavy modifiers (4); and routines (5—ways of giving the count, keeping record of a player's batting, and reporting the score of the game).

For eventcasts to be interactive narratives, the boys and the coach had to be familiar with not only the syntax of SAT but also the technical vocabulary surrounding aspects of the game, from major league statistics (stats) to names of the catcher's equipment. When asked in interviews to name all the technical terms associated with baseball they could think of in four minutes, all the players named at least 45 such terms (e.g., outfield, plate, ERA). In addition, when asked to explain the meaning of the routines just listed in (5), the boys knew that the range of numbers possible in the first two of the three items was limited. For example,

because the number of balls (four) and of strikes (three) for one turn at bat is set, a call of "five and four" is not possible.

During practice, the coach used SAT in a modified eventcast or *bid for sociodramatic play* that set a problem within a narrative of unfolding actions. He laid out a situation that led the boys to imagine the particular scene or series of events that formed the context for their next actions. After the play, the coach initially asked the boys to analyze what occurred, and if they did not respond fully, he set up a *conditional (if-then) statement* in which he identified and analyzed a key move. He often added a brief *rule restatement*, which was then followed by a *conditional extender*—an if-then claim about some particular condition that extended the context for thinking about the applicability of the rule. The following two examples illustrate parts of this technique:

1. *Bid for sociodramatic play*
   Okay, now there's a runner on second, Randy. He thinks this is going over the fence, and he's rounding the bags, but he didn't tag out. High towering fly. Tim's got it, let's nail him.
   [Coach then hits a high fly to Randy.]
   Ohhhh. [Randy misses the ball. After the miss, several players and a volunteer parent offer their analyses. The coach waits and then says:]

2. *Set-up for conditional statement*
   Here again, Randy, the most important thing. If you backed up two steps and got off the bag, [then] you could have grabbed that ball and made the play.

3. *Rule restatement*
   The most important thing is to get the ball and then go after the play. You usually have time.

4. *Conditional extender*
   Or [if you don't have time to get back to the bag, then] you might even be able to tag him coming in, coming back to the bag.

For actions demonstrated, as well as actions that might be called for in hypothesized plays, the coach offered eventcasts during the play ("Randy's there on first now, and the batter gets a marshmallow. . . ") or modally marked scenarios ("He would have been there on first, and what would the player on second be doing, where would he be?").

During demonstration of exercises, the coach verbally scripted his actions as he demonstrated. As indicated in the following two examples, his comments are of two types: reasons for particular actions and the context of when and how he learned about a particular exercise, warm-up drill, or strategy:

1. Let's try one more warm up drill, so we're really ready for grounders. Remember this one? [demonstrates exercise] You used to be good at

that one, right? [demonstrates as he talks] Take each hand and reach around behind the leg and touch the heel of the other, of the opposite foot.

2   That's one I learned in Europe. Soccer players use it over there, and it's really good for the gelatin. Okay, let's try a few grounders.

Much of the coach's talk with the boys focused on what he retained from his earlier devotion to baseball and to following the games with regularity now. The boys imitated this talk, as well as the commitment to using sources of knowledge about the game other than those immediately at hand in their own practices. One player summarized his learning about baseball outside of practice as follows:

> In baseball season, I look at the paper every day. I watch, like, the highlights on the news, listen to the radio, and I hear different stuff, like what other players are doing and that lets me know, like, that's a new thing for me. I always keep learning new things about baseball, and it makes me do the same things on the field. (Player Interview C, January, 1989)

After games or practice, on occasions when the team would go out for pizza, the boys talked minimally about their own games, but primarily about what was happening in the major leagues.

The give-and-take, back-and-forth nature of reasoning, arguing, and making a point on and off the field illustrate the dialogical nature of the discourse. The coach assumes an audience of listeners who share his situation and orientation to action and who recognize that talk about baseball is dominant and valid in this context. Within this large frame, the coach gives cues to the boys to bring into place certain scenarios in which players take on certain roles, execute particular actions, and may meet with several outcomes. The coach constantly models verbal explication of the features of these scenarios by setting up problem-solving narratives as conditionals.

A brief digression is necessary here on conditionals and their examination within the context of natural logic, which assumes that, within daily discourse, every assertion is not proved and that action plays a major role in daily discourse (Grize, 1982). Conditional constructions allow interlocutors to make inferences that try out various alternatives on the "small-scale model" of external reality that individuals carry around in their heads. Speakers and listeners must imagine connections across situations and bring knowledge of past events to bear on a projected scenario (Ferguson, Reilly, ter Meulen, & Traugott, 1986).

Conditionals can carry low hypotheticality and future time reference (e.g., "If he comes tomorrow, we should talk about that," said by one member of a committee about another member known to be consistent in committee attendance). They may also carry high hypotheticality with no time reference and be counterfactual; conditionals of this variety tell us much about inferencing and some of the cognitive prerequisites or combinations of such prerequisites to the acquisition

of conditionals (Bowerman, 1986). Counterfactual conditionals depend on variations of shared bodies of prior knowledge or expertise distributed among interlocutors. For example, if one member of the parent committee trying to raise funds for a camping trip for Little Leaguers says, "If we only had millionaires with open pockets on our board, then we'd have no worries," listeners are assumed to understand that such persons would not only donate funds but would also help raise funds from their associates. In addition, such a statement may be generated with the hope that some board members may have some ideas of ways to bring wealthy and influential members to the board. Such conditionals are highly hypothetical and carry no reference to a specific future time.

In addition, conditionals tell us much about the marking of topic (Haiman, 1978) and the pragmatics of correcting and controlling what is to be talked about (as well as offering a guide to action) within an atmosphere of collaboration and collegiality. It is common within a heated discussion of real events for a speaker to deflect the heat by introducing a call to pretend. Such calls acknowledge analogy making, comparison, and the freeing of participants from what is often the tangle of current real events. The meanings of counterfactuals depend on participants carrying out semantic interpretations within a known state of affairs or context. The imminence or immediate state of affairs that makes the conditional possible need not be stated. For example, an adult observing a child about to reach out to take a package of gum in a grocery store can assert, "I'll pinch you." The adult need not say, "In this public place, objects do not belong to you, and therefore, you may not touch such objects with the intention of taking them into your possession. If you try to do so, you will be punished." The observable context, plus prior norms of behavior and cause-and-effect events in the adult–child relationship, enables the child to interpret the "I'll pinch you" statement as a conditional meaning, "If you touch the gum, I'll pinch you."

Bids for sociodramatic play provide one category of conditional that depends heavily on assumptions about members bringing a prior body of knowledge to bear on current activities. Sociodramatic play is characterized by six play elements: verbal communication, make-believe with regard to objects, imitative role play, persistence, interactions between two or more players, and make-believe in regard to actions and situations (Smilansky, 1968). Invitations to such play come if participants agree that all have had some shared experiences or will quickly learn certain prototypical features from others in the sociodramatic play. For example, a group of children cannot play "doctor" without the assumption that all the children have had experiences with doctors or will follow the "experts" in playing such scenes. In addition, these discourse contexts also assume generalized real-world knowledge (e.g., an object dropped from the table will fall), as well as an immediate surrounding context in which sociodramatic play is appropriate (i.e., relationships obtain between interlocutors so that one or more can issue the call for sociodramatic play; Akatsuka, 1986).

Sociodramatic play presents, then, a special situation for conditionality in that it is made possible by a meta-awareness on the part of all participants that the call for the play is a call for pretense or imagination. Although both children and adults will sometimes introduce invitations to pretense by specific lexical markers, such as *suppose*, *let's pretend*, or *imagine*, it is more often the case that sociodramatic play is initiated simply by an announcement of counterfactual conditions (e.g., "Man on second, top of the eighth inning . . ." said during practice drill on grounders). Within some cultures, conditionals make up a large part of the everyday world of young children's language input (Heath, 1983). Some middle-class, literate, school-oriented families surround their children with make-believe stories or "let's pretend" occasions in which conditionals serve discourse functions.[1] Bids for sociodramatic play are essentially unchallengeable (Givon, 1982); interlocutors are assumed to have to agree to play word games, tell stories, or pretend in animated play.

Within the Little League team already described, sociodramatic play—within the ongoing play of the drama of the full season—allows the players to achieve mastery, to contrast, illustrate, and explore options. It asserts nonliteral, untrue, counterfactual conditions of the current limited world and makes possible many other worlds (Bruner, 1986). Rules for the logic of pretense go into effect once the participants recognize what is at work. Gregory Bateson has told us that social play is possible only if the participants are capable of metacommunication, of signaling that a counterfactual is at work (Bateson, 1972). The frame of play not only makes the assertions counterfactual, but it also transforms roles within the situations and orchestrates a collaborative process. For the interaction to be successful, all interlocutors or participants in the scene must take the perspective that play is "on." Thus, participants' constant attention is necessary, because the shifts between what is real and what is not real can come at any moment.

Those who have studied play in various cultures around the world have repeatedly documented the learning value of sociodramatic play— or, indeed, of play in general. Although the primary function of play is regarded as enjoyment, its secondary function has long been characterized as mastery (Kuczaj, 1982).

[1] It is important to note that current shifting dynamics of family life within the American middle class, as well as among families in poverty, force youngsters to take on independent responsibilities of decision making much earlier than was the case before the 1950s. Thus, opportunities for role-play through word games and make-believe have greatly diminished in the leisure activities of families across classes. An increasing percentage of households today lack members who play the traditional roles of mother, father, or extended family members (Wallerstein & Blakeslee, 1989). The context for language socialization of these children is not that of adults in sustained and highly redundant play routines. Occasions for sustained talk and face-to-face interactions outside immediate decision making or conflict resolution have become increasingly unavailable for both middle-class and working-class children (Csikszentmihalyi & Larson, 1984; Heath, 1990). Sustained opportunities for the "mutual tuning-in" (Schutz, 1951) upon which linguistic and metalinguistic awareness rest would seem to occur for children of the middle and teenage years much more with their peers and adults in neighborhood-based activities than with adults in the home.

Language play as pattern-practice and drill is well known to linguists (Ferguson & Macken, 1983; Weir, 1962). Anthropologists have acknowledged the powerful role that nonordinary language play has in some communities where teasing, gibberish rhymes, and pretend games promote role-shifting, the acquisition of new genres, and cooperative discourse. The analysis of these routines points out the synchronicity of these encounters and their interdependence with judgments about role relationships and suspension of customary conventions of interactions (Abrahams, 1964; Dundes, Leach, & Ozkok, 1970; Schieffelin & Ochs, 1986).

Sociodramatic play provides a frame with conditions for problem solving that all interlocutors must acknowledge as a *causal* environment that will bring about certain effects or results. The coach characterized the efforts of the entire team, including his own, as being within the "good time" of "a fantasy world" (see team goals, team objective, and coach's premise stated earlier). He shaped and reshaped this world and allowed it to expand greatly the types of reasoning, inferencing, and action taking practiced by the boys. He marked, and encouraged the boys to mark, what they were learning from the shifts made possible in their sociodramatic plays by asking them specific sets of questions as follow-ups or lead-ins to plays. To their conditional world, the coach added rules that he then followed up with more conditionals that would lead team members to expand their understanding of various contexts that could shape outcomes of applications of rules (see "setup for conditional statement," outlined previously).

Questions of Knowing

During practice, the coach asked the players questions that called for three types of narrative responses covering past events: (a) *reflections*—options and think-aloud analyses of certain plays or scenes; (b) *rule recounts*—recitations of rules that applied in the situation just witnessed; and (c) *recites*—say-aloud scripts of what either he or they would be thinking or saying to themselves during certain types of plays.

Reflections

The boys expected analysis as part of their practice. The coach sometimes made explicit the fact that he would call for the analysis of a play, a particular move, or a segment of practice drills. He would call out to specific players by name: "Randy, what did you think of that one [grounder]?" "Rob, do you know why you got that one?" Often, after a sociodramatic play, he would ask the boys to analyze what had taken place within the action elicited from the set-up of the situation. The boys would collectively offer views on what occurred, and the coach would restate and supplement their comments. When players did not answer direct questions, the coach also used completion techniques to elicit their reflec-

tions, such as, "And you want to do what?" [No answer]. "And you aim for the _____?" (with marked rising intonation). The coach would wait until one or more boys finished his sentence and then restate what he saw as the possible reflection of the player, ending with a request for confirmation ("Right?").

In addition, the coach often asked vague questions that one or more boys would answer. He would then follow up with additional queries or substitutes for specific parts of their answers, sometimes offering "wrong" interpretations or restatements that provoked further clarification from the players. This strategy tested the attention of other players, who could protest if the boy being questioned did not catch the fact that the coach had given a wrong interpretation or had misstated a rule. This strategy is illustrated in the following example:

Coach:	What about a fly ball?
Player:	You, you have, you have your glove, you have your glove a couple inches from your face, and you're looking up at a position semiperpendicular to the ground, and you have your feet a little bit, about like grounder wise, planted apart steadily, so you can move back, forth, and around.
Coach:	You gotta be able to move. What about your legs? Stiff and straight, right?
Player:	No.
Coach:	No?
Player:	They're, they're ready to move.
Coach:	Which is how?
Player:	Bend the knees.
Coach:	Bend those knees, right?
Player:	Right.

Rule recounts

Simple rules, often repeated, marked much of the talk between coach and players. Throughout the season, the coach asked the boys to restate their team goals and the Little League pledge. He also gave them several sets of rules for particular situations on the field. The following exchange over rules illustrates talk about rules during fielding practice:

What are the three rules? Do you remember? [shouts from various parts of the field] That's right. First you get the ball, then you get set, and then you get rid of it. [Several boys shout out the three rules before the coach yells out again] That's right, get the ball, get set, and then get rid of it.

And if you're real close to the bag, how do you throw it? [boys shout various answers, including "underhand"] Underhand, that's right. Why? [boys again shout various answers] That's right, make it easy for him to catch.

Restatements of rules after the first few practices were collaborative, with players from all over the field shouting parts, and the coach closing off by recapping in

simple form the full run-through of all rules recited by the boys. The calls for such rules may be divided into direct questions (first exchange) and conditionals (second exchange).

Recites

In addition to general rules for specific broad achievement goals (e.g., catching, hitting, or fielding), the coach elicited from each boy direct recitation of what the coach would say and what the player would be thinking or saying to himself during his performance within certain roles. The coach would ask, for example, "What do I say when I want to see that position?" Of a player at bat during practice, he would ask, "What did you do right on that one?", "What are you going to tell yourself?", or "You really launched into that one. Was your shoulder down?".

To test how such efforts carried over into the boys' abilities to think about how they internally monitored their actions, I involved some of the boys in stimulated recall by showing them segments of a videotape of a championship game and asking each player involved in certain key plays to say aloud what he might have been thinking at particular moments of play. One player, up for his second bat during the game, offered this analysis:

I'm thinking, I'm one for one. I don't want to make any mistakes. Just calm down and put the bat on the ball, and go for two for two. I like having a good percentage up at the plate. When I see pitches that I like to hit, I swing harder. (Player Interview C, January, 1989)

Direct speech or self-talk (e.g., the "Just calm down . . . two for two" segment) occurred frequently in such recites of past performances, as did expressions of the boys' sense of assessment of their activities by counts (two and two) and records (one for one).

The coach's questions that asked for reflections, rule recounts, and recites had the effect of personalizing the boys' strategies, approaches, and knowledge about the game. To these personalizing queries, the coach added personification of both equipment and player moves. For example, the coach often referred to the bat (and not the batter) as "really lazy." He used diminutives to describe particular moves that led to errors: "Your step is just a little bit too short" (rather than "You aren't taking big steps to get out there"). When the boys made mistakes during practice, he often offered them conditionals granting personal agentry in his analysis of their moves: "Sandy, don't screen 'em, *if you can*—that's OK *if you wanna* catch 'em, but screening 'em can make it tough. *If you're gonna go for it*, go all the way." Such offers of personal agentry often preceded general conditionals that contained impersonal second person pronouns.

SETTING A LEARNER FRAME

Several features of Little League life made possible the conditions that led to the language uses and reflective practice the boys demonstrated. The pervasive ethos of the team was one of a fantasy of major league play and of problem solving within the overarching conditional (i.e., if you want your team to succeed—or the play/drama to go well—you must first take on the job of improving your own learning). In general, competition among players on the team did not become an issue, because opportunities to play various roles rotated during practice, and the public reflections on what and how certain players were doing led to a consensual perspective on which boys would play key positions during games. Team members recognized that their primary goal was to demonstrate and analyze various skills necessary for all players (e.g., batting, catching flies and grounders, knowing types of pitches and appropriate occasions for their uses).

Key conditions for the team's "guided participation" (Rogoff, 1986, 1989) included the legitimation of differences, focus on monitoring, and integrative praxis. Each of these supported the problem-solving narratives of conditionality and the collaborative and highly interactive questioning I have examined. These verbally reinforced displays of skills and knowledge depended on nonverbal supports that came from the boys' attending, observing, and participating throughout practices and the games, as well as adding to their knowledge of baseball through sources available outside team activities.

Legitimation of Differences

Players learned from the first day of practice, and through written materials from the coach, that they were in the business of valuing differences. If a boy was small, that did not mean he could not be a strong hitter; if a boy was overweight, that did not mean he could not be a fast runner. The coach expected and called attention to variations in pitching, sliding, and running styles—and even to variations in degrees of knowledge of the small-print rulings for Little League games. Some boys studied the rules and talked with their fathers and the coach about specific rules that applied to Little League or that offered guidance on interpreting umpires' judgments. Others chose to alternate batting as a right-hander or left-hander, to deviate from expected styles of pitching, or to make the most of the lack of balance between their talents (e.g., boys who did not have the highest batting averages were sometimes best known as fast runners).

To keep the valuing of differences from getting out of hand and undermining team achievement, boys had to be situationally sensitive in their criteria of justification for differences. They could not be different just for the sake of difference; they had to be sensitive in their planning and competent in oral explanations if

called on to explain changes in their behaviors. Moreover, such differences kept categories flowing: The weakest outfielder of the early season could move to catcher by mid-season; the smallest player who lagged behind all the other players in running time and batting power could become the team's strategist. The coach and players called attention to these differences often, both during practices and in interviews.

Monitoring

Team players expected to be ready to offer verbal evidence of their close attention to what was going on around them and to what others were doing. The consistent attention to monitoring by all members kept individuals from becoming isolated and spread positive evaluations as well as descriptive analyses of moves and actions across all team members. Monitoring was a consistent public activity; it held little value as a private indulgence. The coach stressed that "Bad days happen to us all," and that neither individual worry and shame nor small-group ostracizing of individual players for mistakes should happen.

Positive public monitoring was highly personalized. During practice, the coach prefaced approximately 65% of his questions with vocatives (e.g., "Roddy, what were you doing right in that catch?"). Players openly talked about their changes of pace and expertise through the season and their relative weaknesses and strengths. The coach guided them verbally in their observation and analysis of nearly every element of practice and games, recapitulating strategies and running through the effects of change in one element of a context on other elements (e.g., "What could have happened, Sam, if Rob had bunted? What about the man on second?"). Together, players and coach pondered aloud their performance as a team, as well as the contributions of various members to the team effort on particular days. The universal sin was "goofing off" (e.g., being a "hotdog"), and in interviews players volunteered various causes for such behavior (e.g., being tired, feeling lazy, having a long weekend, watching too much TV, or "being a couch potato"). Teammate approval worked as a strong form of social control, as did the coach's invoking of the major league image for the team. Disciplinary talk by the coach focused on the impending penalty or jeopardy to the group as a whole caused by individuals who goofed off.

Several other verbal strategies put a positive frame on monitoring within both practices and games. Less than 1% of the coach's utterances during practice marked behaviors or players with negative linguistic forms. To express negative valuations, the coach used certain terms of disapprobation (e.g., hot dog), asked the team to make sounds to show what they thought when someone missed a ball because he was clowning or not paying attention, and issued general negative directives ("Don't go for the low ones"). When a player had a bad time at bat

or missed several catches in sequence, the coach usually offered no assessment but asked a question that called for one of the kinds of responses discussed above. Another tactic was to choose one positive feature of a player's behavior and announce it, leaving aside any verbal elaboration of the error: "Okay, you had your glove out there, that was good" (said to a player who had just missed a throw to first base).

In games as well as practices, neither team members nor the coach designated plays or decisions as negative. Groans and moans expressed disappointment without direct articulation of assessments. In contrast to the almost constant use of extended sequences of interactive talk between coaches and players during practice, relatively short utterances (an average of three words) were used during games, such as "There you go," "Elbow up," "Hey, Mike, beautiful," "Come on, Ryan," "Go, Buddy," "Awesome, Joe," "You like that?" "Wait for a marshmallow," "Swing it away," "Way to watch," "You got it," or "Let's hear it." Of the approximately 3,600 utterances by the coach and players recorded during a nine-inning game when their team was at bat, the only instance of a negative was a shout by the coach for a positive play. He yelled to a player rounding third base toward home plate, "Don't stop."

Integrative Praxis

The team's learning environment was highly integrative. For both players and coach, the fundamental integration came in bringing play and work together. But several other integrative features marked the team's life. Theory and practice came together in the players' constant redistribution of their knowledge of particular poses, moves, and strategies during practice. Theories met practice in the different styles and levels of mastery of individual players, and the application of particular theories to specific players and plays received consistent attention from coach and team members. In addition, the world inside the team met with that outside the team through the underlying team directive to collect information from sources outside team life such as major league games or *Sports Illustrated* stories. The practice of mathematical routines came together with abstract representations of individual achievement as the boys considered mathematical and graphic portrayals of their achievements over the course of the season.

This integration in several forms rested squarely on the view team members seemed to have of themselves as decision-making "professionals" who wanted to be like and act like their models in the major leagues. Any matter of debate about the team resolved itself in the rhetorical question, "How would they do this in the major leagues?" Thus, the knowledge base for answering this question depended on the boys' observing, reading, and listening to sources beyond the immediate team. The general assumption of both the coach and players was that

players would learn what it meant to be the best by watching and studying the experts--those reported in the newspaper and on radio and television—as well as more local sources, such as fathers, older players, and neighbors. Team members consulted various types of sources during the season to gain knowledge, receive guided practice, check on decisions or calls during games, or validate particular rules and regulations specific to Little League. Some sources were highly interactive and depended on direct participation (e.g., after-school pitching practice with fathers or neighborhood friends); others (e.g., watching games on television) took place in isolation or with friends and family members who confirmed hunches or tested the general acceptability of theories developed in Little League play.

Stats—published statistics on major league teams present and past—played a major role in characterizations of the game and of self for several team members. They talked easily about certain mathematical portrayals of games, and several of them had some sense of how their play through the season translated into stats.

On the field, all the boys practiced mathematical routines, such as rounding, estimating, and averaging, and they heard talk about concepts from geometry generally covered in fifth- and sixth-grade mathematics (Stenmark, Thompson, & Cossey, 1986). Some of the boys went further than others by working with their fathers to keep game statistics and flow charts. The results of these assessments were common knowledge among the players, although the comparative results of individuals' averages were never discussed during practice or used privately with certain players to goad them to better performance. Instead, the major portion of think-aloud reflections focused on individuals improving their own performance through attention, analysis, and practice.

Although the aura of "learning to be like the experts" hung over the team, none of the members claimed that they wanted to play in the major leagues or grow up to become a professional ballplayer. Those interviewed said that, aside from giving them time to be with their friends, playing ball allowed them to get "the basics" and to be creative with these basics. They expected practice sessions to be devoted to learning about elements of certain types of action in the game and to assume a certain independently gained level of knowledge on their part. They often used their own knowledge of cases---of players, plays, and games— to ask questions, make a point, or challenge other players' analyses of certain plays.

CONCLUSION

There are several questions to ask about the language of knowing in baseball: Does it work? What kinds of results does it produce? Do the boys know any more than they did before the season started? At the opening of the season, the Little League team studied here was near the bottom of the league--a group of inex-

perienced newcomers. At the end of the season, they were the champions of their area's Little League teams. It was not feasible to control and test for their preknowledge and postknowledge of baseball vocabulary and discourse genres (e.g., SAT), rules of Little League play, or understanding of mathematical concepts and perceptions of sources relevant to the game. We can only infer from their team's climb in the league, as well as from self-reports and demonstrations in interviews and stimulated recall sessions, that the goals and strategies of their learning context facilitated their achievements and attitudes.

But more important than these informal indications of results is the illustration within the Little League activities of several contextual features positively regarded in recent research on learning. Within the season, the boys participated intensely in apprenticeship with an expert (John-Steiner, 1986), self-monitoring and reflective practice (Palincsar & Brown, 1984), guided participation (Rogoff, 1989), and socially shared negotiation of knowledge and action (Hutchins, 1986). Moreover, the reasoning used in Little League activities supports many of the arguments given by those who support "natural logic" and the study of reasoning within everyday discourse (Grize, 1982; Toulmin, 1958). The high density of both action and verbal explication per unit of time in practices set argumentation within constant test situations. The boys knew that silent monitoring was to accompany their actions; thus, dialogue—both in thought and in oral expression —marked their practices. The coach's modeling and the interactive discourse of team members modeled the necessary steps to prepare for successful dialogue: (a) evoke a frame or scheme for the topic or problem to be addressed, (b) consider potential replies to utterances (acknowledging the differential expectation attached to questions vs. statements), and (c) formulate a counter discourse (Grize, 1982).

The primary kind of discourse in which the boys engaged—sociodramatic play—and the conditionality statements and calls for reflection that followed this discourse rested on a meta-awareness of the talk of theory-in-action. The cooperative principle behind their talk was the assumption of a stance of "reflective awareness" that carried the value of giving a sense of "deliberate control" (Vygotsky, 1987).

Translated into laymen's terms, many of these contextual features in support of learning appear in parents' recommendations about Little League team management: "Get the kids to help each other," "Let them know when they're doing something right," "Make it fun—take the negative out of it," "Get someone [as coach] who knows what he's doing." However, parents rarely give such recommendations for learning in schools. Those interviewed about this Little League team said they held these principles as necessary for after-school activities *because* they did not expect any of these features to mark classroom life or school learning.

Yet, in the late 1980s, the metaphor of teaching as coaching gained popular attention. A major education reform movement, "essential schools," promoted

the coach–player relationship and team collaboration in classroom learning (Sizer, 1984). The vast majority of research on coaching, however, has focused on the one-to-one nature of the interaction and emphasized how individuals acquire complex skills in certain types of naturalistic settings (e.g., Fry, 1987; Romano, 1987, on writing conferences as coaching).

The case presented here of a Little League team and its coach illustrates the following coaching practices between a single instructor and a group of players or learners:

☑ Learners assume prototypical identities as professionals who must handle all basics or key activities (e.g., catching, hitting) in a sustained dramatic ritual with codified impersonal rules and local personalized rules.

☑ The learning task has a seasonal span and a goal of the best possible performance in each presentation, because individual games or performances add up and help determine the season's outcome.

☑ Within problem-solving narratives of sociodramatic play, the coach calls on learners to analyze hypothetical episodes within each play and to consider how varying single features of these episodes can potentially create different outcomes.

☑ Exercises and practice assume the fundamental sequence of basic activities plus "creativity"; aside from accepting team rules and certain activities as essential to the drama, no emphasis is given to learning X before Y.

☑ Learners *reflect* and *recite* to demonstrate their attention to their own participation in activities; the coach illustrates components of each activity by simple rule sets and by calling attention to individuals' fulfillment of certain rules.

Central to the task of coaching many learners at the same time is acceptance of the value of differences among learners. A team cannot expect to have all members at the same level of ability in the same complex skills. Instead, the potential for division of labor within the full-season drama depends on varying levels of performance in each niche; however, the general upgrading of performance for each individual rests in the social control potential of having knowledge about separate tasks shared and distributed among all members. Added to the general distribution of knowledge is the shared value of monitoring self and others and living within a context of learning through conditionalities, which result in social control and group improvement through individual achievement.

Within pedagogical theory, scholars recommend behaviors, attitudes, and structural changes to make individuals and institutions reshape themselves into players who have a volunteer mentality and who want to improve themselves and their team and keep on learning. *Motivation* is the pedagogical term that often

enters discussions of such reshapings. The understanding of what makes individuals take up different tasks with varying degrees of involvement and volunteerism can derive much from current philosophical work that enables us to link intention with the ideal coordination of theory and evidence (Wilson, 1989) and to consider the relative value of certain judgments or reasons under varying circumstances. The practice of making distinctions between theory and evidence helps explain actions with particular "intentional sets" that result from the intersection of roles, rules, and situations (Altieri, 1981). Psychologists who examine reasoning in everyday experience indicate that knowledge structures are induced from ordinary experience as "pragmatic reasoning schemas" (Cheng & Holyoak, 1985). Moreover, the explication of such schemas allows individuals to revise these schemas on the basis of variations of context or functions and to make inferences about their "contingency values" (Smith, 1988).

This chapter (and the project of which it is a part) reveals how structured voluntary learning (e.g., that of Little League teams) involves youngsters in self-revising and reflection and promotes individual achievement through collaboration. The best summative characterization of what happens in such groups may well be the constitution of a *normative community*. Historians, social scientists, artists, and philosophers have in the past decade given intense attention to the elements and qualities of community within American life and the dissonance between the quest for community and the ideal of individualism in American life (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985). Aside from the intention of longevity and permanence and the expectation of stable spatial connections traditionally linked with communal association, neighborhood teams carry many other features of communities, including interaction and mutual dependence, expressive ties through numerous symbol systems, mutual and common sentiments, shared beliefs, and an ethic of individual responsibility to the communal life (Nisbet, 1953; Scherer, 1972). These features help shape individual identity, lead to an acceptance of group standards, offer a sense of place through identification with the group, and ensure a sense of "winning" through solidarity and mutual support. Knowledge building and awareness of the interdependence of knowing and acting rest on some degree of intentionality to link play and work for productive individual and team outcomes.

References

Abrahams, R. (1964). *Deep down in the jungle: Negro narrative folklore from the streets of Philadelphia* Chicago: Aldine.

Akatsuka, N. (1986). Conditionals are discourse bound. In E. C. Traugott, A. ter Meulen, J. S. Reilly, & C. A. Ferguson (Eds.), *On conditionals* (pp. 333-352). Cambridge, England: Cambridge University Press.

Altieri, C. (1981). *Act & quality: A theory of literary meaning and humanistic understanding* Amherst, MA: University of Massachusetts Press.

Bateson, G. (1956). The message "This is play." In B. Schaffner (Ed.), *Group processes: Transactions of the Second Conference* (pp. 145-242). New York: Josiah Macy, Jr. Foundation.

Bateson, G. (1972). *Steps to an ecology of mind.* New York: Ballantine.

Bellah, R. N., Madsen, R., Sullivan, W. M., Swidler, A., & Tipton, S. M. (1985). *Habits of the heart: Individualism and commitment in American life.* Berkeley, CA: University of California Press.

Bowerman, M. (1986). First steps in acquiring conditionals. In E. C. Traugott, A. ter Meulen, J. S. Reilly, & C. A. Ferguson (Eds.), *On conditionals* (pp. 285-308). Cambridge, England: Cambridge University Press.

Bruner, J. (1986). *Actual minds, possible worlds* Cambridge, MA: Harvard University Press.

Cheng, P. W., & Holyoak, K. J. (1985). Pragmatic reasoning schemas. *Cognitive Psychology, 17,* 391-416.

Crystal, D., & Davy, D. (1969). The language of unscripted commentary. In D. Crystal & D. Davy (Eds.), *Investigating English style* (pp. 125-146). Bloomington: Indiana University Press.

Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent: Conflict and growth in the teenage years.* New York: Basic Books.

Dundes, A., Leach, J. W., & Ozkok, B. (1970). The strategy of Turkish boys' verbal dueling rhymes. *Journal of American Folklore, 83,* 325-349.

Ferguson, C. A. (1983). Sports announcer talk: Syntactic aspects of register variation *Language in Society, 12,* 153-172.

Ferguson, C. A., & Macken, M. (1983). The role of play in phonological development. In K. E. Nelson (Ed.), *Children's language* (Vol. 4, pp. 231-254). Hillsdale, NJ: Erlbaum.

Ferguson, C. A., Reilly, J. S., ter Meulen, A., & Traugott, E. (1986). Overview. In E. C. Traugott, A. ter Meulen, J. S. Reilly, & C. A. Ferguson (Eds.), *On conditionals* (pp. 3-20). Cambridge, England: Cambridge University Press.

Fine, G. A. (1987). *With the boys.* Chicago: University of Chicago Press.

Fry, D. (1987). *The coaching writer.* St. Petersburg, FL: Poynter Institute.

Givon, T. (1982). Logic vs. pragmatics, with human language as the referee: Toward an empirically viable epistemology. *Journal of Pragmatics, 6,* 81-133.

Goffman, E. (1974). *Frame Analysis: An essay on the organization of experience* New York: Harper and Row.

Grize, J. B. (1982). *De la logique a l'argumentation* [From logic to argumentation]. Geneve: Librairie Droz.

Haiman, J. (1978). Conditionals are topics. *Language, 54,* 564-589.

Heath, S. B. (1983). A lot of talk about nothing. *Language Arts, 60*(8), 999-1007.

Heath, S. B. (1986). Sociocultural contexts of language development. In Bilingual Education Office, California State Department of Education (Ed.), *Beyond language: Social and cultural factors in schooling language minority students* (pp. 143-186). Los Angeles: California State University.

Heath, S. B. (1990). The children of Trackton's children: Spoken and written language in social change. In J. W. Stigler, R. A. Shweder, & G. S. Herdt (Eds.), *Cultural psychology: The Chicago symposia on human development* (pp. 496-519). Cambridge, England: Cambridge University Press.

Hedegaard, M. (1986). Two approaches to thinking and knowledge acquisition. *The Quarterly Newsletter of the Laboratory of Comparative Human Cognition, 8*(2), 58-63.

Hutchins, E. (1986). Mediation and automatization. *Quarterly Newsletter of the Laboratory of Comparative Human Cognition, 8*(2), 47–58.

John-Steiner, V. (1986). *Notebooks of the mind.* Albuquerque: University of New Mexico Press.

Kuczaj, S. (1982). Language play and language acquisition. *Advances in Child Development and Behavior, 17,* 198–232.

Nisbet, R. (1953). *The quest for community: A study in the ethics of order and freedom.* New York: Oxford University Press.

Palincsar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction, 1*(2), 117–175.

Rogoff, B. (1986). Adult assistance of children's learning. In T. E. Raphael, (Ed.), *The contexts of school-based literacy* (pp. 27–40). New York: Random House.

Rogoff, B. (1989). *Apprentices in thinking: Children's guided participation in culture.* New York: Oxford University Press.

Romano, T. (1987). *Clearing the way: Working with teenage writers.* Portsmouth, NH: Heinemann.

Scherer, J. (1972). *Contemporary community: Sociological illusion or reality?* London: Tavistock.

Schieffelin, B. B., & Ochs, E. (Eds.). (1986). *Language socialization across cultures.* Cambridge, England: Cambridge University Press.

Schutz, A. (1951). Making music together: A study in social relationship. *Social Research, 18*(1), 76–97.

Shore, B. (1989, May). *The American pastime: Ritual baseball.* Paper presented at Center for Advanced Study in Behavioral Sciences, Stanford University, Stanford, CA.

Sizer, T. (1984). *Horace's compromise.* Boston: Houghton-Mifflin.

Smilansky, S. (1968). *The effects of sociodramatic play on disadvantaged preschool children.* New York: Wiley.

Smith, B. H. (1988). *Contingencies of value.* Cambridge, MA: Harvard University Press.

Stenmark, J. K., Thompson, V., & Cossey, R. (1986). *Family math.* Berkeley, CA: Lawrence Hall of Science.

Toulmin, S. E. (1958). *The uses of argument.* Cambridge, England: Cambridge University Press.

Vygotsky, L. S. (1987). *Thinking and speech.* (N. Minick, Trans.). New York: Plenum.

Wallerstein, J., & Blakeslee, S. (1989). *Second chances: Men, women and children a decade after divorce.* New York: Ticknor & Fields.

Weir, R. (1962). *Language in the crib.* The Hague: Mouton.

Wertsch, J. V. (Ed.). (1985). *Culture, communication and cognition: Vygotskian perspectives.* Cambridge, England: Cambridge University Press.

Wilson, G. M. (1989). *The intentionality of human action* (rev. ed.). Stanford, CA: Stanford University Press.

PART THREE

COORDINATING COGNITION: LINGUISTIC TOOLS AND SOCIAL KNOWLEDGE