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A Socio-Historical Approach to Re-mediation*

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At an intermission in the conference, somebody was reporting an overheard conversation that went sort of like, "Who's that Russian they are talking about? Vic who?" Vygotsky is his name. The formal title of this talk is "A Socio-Historical Approach to the Study of Re-Mediation." Lev S. Vygotsky founded the socio-historical school of psychology. What we want to do is give a little bit of background about why his ideas, and those of his followers, are of practical interest and how these ideas might apply to children who are having extraordinary difficulty learning to read in our schools.

Let us back up, however, and describe what it means to adopt a socio-historical approach to literacy. First, this approach emphasizes that we are talking about *uniquely human* characteristics of human behavior, ones which are not likely to have been invented spontaneously by individuals or to be related directly to our near animal neighbors. Whatever else there is about reading and writing, if you grew up and lived for a long time on an island with no reading or writing and no one had ever heard of it, and you were there by yourself, it is extremely unlikely that you would invent the alphabet. It took about ten thousand years from the earliest signs of writing to the invention of the alphabet, and one individual is not likely to get it done in a lifetime. Aspects of human behavior with a long social history are what Vygotsky called higher psychological functions. They arose a long time ago, they were there in some form at the dawning of *homo sapiens*, and they have been changed in social interaction as a result of historically accumulated experience.

Now, let's apply that idea to the notion of reading and writing. On the one hand, you can argue that the existence of writing as a function is about two or three thousand years old, depending upon how you measure it. Writing is definitely a "new" human acquisition so you wouldn't go looking in the brain for a particular writing area if writing was hurt by some kind of a brain deficit. The socio-historical approach pushes you deeper into the past, to trace the basis of literacy all the way back to the beginning. We could go back to Austrolopithecus, perhaps 300-400 thousand years ago, where you have the first evidence that somehow people are regulating their interactions with the world and each other using pieces of the world external to themselves. If you begin there, you find the basic property of reading and writing. The basic act of mediation involves regulating your interactions with the world *indirectly* . . . through objects that are artificial, made by human hands. It may be as simple as a mark on a stone that regulates when you meet somebody; it may be a mark on a stick to remind you that you've done something before. In each case, the simple mark reorganizes your coordination with the world by virtue of its properties as a mediator.

There are many remnants of this early manifestation of pre-writing. If you go to the caves at Lascaux, if you go through all of Alexander Marschak's work on ice age people, you'll find that the activity of mediation through external signs is as old as homo sapiens. If you stop for a moment and think about Stonehenge, you might begin to ponder about the fact that *very* big rocks, were carried a *very* long way by people with no trucks or trains. Those were people who *really* cared. They weren't carrying those rocks for their own sake. They were carrying them because they were told that if they arranged those rocks in a certain way they could discover regularities in the universe that would allow them to predict what was going to happen next, and roughly when it would happen.

If you go down in the desert south of San Diego you'll come upon remarkable places that have this same property. On the winter solstice and only on that day, the sun rises over a particular hill. Its light slices through a particular slit in a rock where there are drawings of humans on rocks. One human has a dagger raised in his hand, and just at sunrise on that day, the sun creeps across the rock and hits the dagger, bounces off and hits the other man. An enormous amount of

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with the physical world, and on the other hand, with our social world. Literacy then makes possible new forms of coordination in time and space. Objects mediating our interactions with the world make available the potential for new forms of higher psychological processes.

Technologies of Mediation

What's re-mediation all about from the perspective of the socio-historical school? Well, in its root meaning, re-mediation means a *shift in the way that mediating devices regulate coordination with the environment.* A very interesting early example of such a shift occurred historically when syllabaries were replaced by an alphabet. A shift from a syllabary to an alphabet creates a representation of language at a level of analysis which is qualitatively new. Alphabets make possible explicitness that can have a powerful potentiating affect on people's ability to regulate their activities with each other and, as we say, to create common knowledge.

If you are taking a socio-historical approach, you remind yourself that the beginning of the symbol systems that eventuate in the alphabet goes back to the initial forms of exchange using money. From the beginning, writing and reading were embedded in socio-economic practices, in activities which had a complex higher level goal. From the simple token systems in the Middle East, to the bronze age with the evolution of multiple tokens scratched in clay, and then to the Phoenician syllabary (Schmandt-Besserat, 1978), we can trace the history and development of various technologies of mediation. When the Greeks tried to trade through the syllabary, they ran into ambiguities which forced them to do some analysis on what the syllabary was about (Gelb, 1963). These difficulties lead eventually to the fundamental breakthrough that is now the bane of lots of children in our society: the breakthrough from representing language at the level of directly communicable sound elements (syllables) to communicating through a medium in which you cannot explicitly make clear what it is that you are doing (the alphabet). In order to make this difference clear, let's look at how we might teach a child to read the word 'cat.' In societies where 'cat' is written as a syllable, it is represented by one sign which is supposed to evoke that sound image so we can say 'cat' and thereby interpret a bit of the world. But in an alphabetic system 'cat' isn't simply made up of a single character. There are three parts to it -- C, A, and T. So we say those are the three parts of cat -- "c," "a," and "t." But we quickly have to retract our statement. "No! no, no, "c," "a" and "t" are not really the parts. What it really is, is "k," "α," and "t." But is it really k, α, t? No, it's not. Because in order to make those sounds you have to combine a stop and something that was operating as a vowel. You can't say a consonant by itself. You can only say it in combination with something else. So, what the alphabet represented was an *abstraction*, a kind of analysis that allowed the languages spoken in that area of the world to be represented with an extreme degree of economy.

But we still have the problem of how to explain to kids what it is that happens when you go from k-α-t to 'cat.' All we can do to explain is illustrate what we mean by a process that we call blending. We *simulate* the process of reading. We have a procedure. We start out slowly with k-α-t, k-α-t, k-α-t, saying it faster and faster: k-α-t, k-α-t. But blending doesn't work. No matter how fast I say k-α-t, I don't get 'cat.' This isn't what happens in the mature act of reading the alphabetic representation of 'cat.' What happens is that there's a *qualitative reorganization* of the sound the teacher models. You start with the pieces, k-α-t, but think of it as a bird trying to get off the ground. The theory of blending tries to give the kid a start like a mother bird urging along a fledgling. You give the fledgling a push and if it can just get off the ground the right dynamic properties will take over. Applied to children and the alphabet we suppose that by blending the kids will begin to do the synthesis, because to make use of the alphabet, you can't just have analysis: that's how history arrived at it. You have to have analysis *and* synthesis. Both sides of the process are required to produce reading, and we can't communicate directly about the real nature of this two-sided process.

Consequences of the Alphabet

We are told that the alphabet made possible really new forms of organization of knowledge (Havelock, 1976; Goody, 1977). In the middle ages and late middle ages it allowed the reclamation of vast sums of scientific work from an earlier era. When combined with the ability to smelt iron in certain ways the alphabet made possible the printing of bibles. It supported an incredible notion for the time: you no longer had to mediate your interactions with God through Rome (which if you were German peasants didn't seem like a particular reasonable thing to do under the circumstances). You could reach God, as they say, through the book. You could get directly to Him through His word -- The Bible.

Alphabets and the Reduction of People to Numbers

It seems that what we were buying in the alphabet was an analytic device that enabled a new mode of cultural interaction and metaphors for living eventuating in the creation of the industrial mode of production. If Havelock and Goody are correct, the alphabet made possible modern science and modern states. Thus, mankind's recent achievements, the ability to send astronauts into space, to see the other side of Venus, to look into your body at little pieces too small to imagine, all owe a lot to the analytic power of the alphabet.

The kind of science that we developed through the analytic principles of the alphabet allows us to be explicit, and to create models of reality that operate on high speed machines. As psychologists we use it to simulate learner systems, pull out main effects and do predictions of what's going to happen later with certain margins of error. We do not want in anyway to underestimate or to denigrate the power of current psychological methodology for operating in the world. But, this way of knowing the world comes at a great cost.

Let us concentrate on the cost that has to do with education. Let us take three countries to illustrate this: Japan, the Soviet Union and the United States. In each country the applied outcome of current psychological methodology is to reduce people to a single number. This number is scaled as a value on a dimension that defines the "main effect." The ultimate embodiment of this reductionism in Japan is the score you get when

you graduate from high school on a national examination. We tell our Japanese colleagues that "We Americans don't know how to subordinate ourselves as well as you guys do, we have two numbers, verbal and quantitative." Our Soviet colleagues would deny that they had one number and they would say that human values are distributed in a lot of ways. In certain times in their history they have been. That's certainly their ideology. But clearly one of the driving concerns that heads the Soviet education system today is the alienation of labor from the university. They have reintroduced the use of IQ-like tests in industry and schooling. Such a move can recreate classes, based on educational attainment, in response to the dominant need for efficiency in a modern industrial world.

What we find in the educational systems of this so called "information age" is that high scores on one dimension more and more depend upon your ability to get access to, and to be skilled in the uses of systems for coding information. Someone was joking at lunch about computers meaning a new level of alienation. That seems to be absolutely right. Every step you put between human beings and their communication with each other requires a potential reduction of understanding between people. We do not have a good theory of all those reductions as yet. But we have a very powerful system for reducing.

Each country wrestles with this fact in their education system. To the Japanese, the whole machine-based way of thinking is external, and new. The Russians have a theory that says that there's a great teacher who knows how to deal with all this technological stuff; they say they are too savvy to be fooled by technology. We in the United States have a different way of dealing with the issue. We give everybody an equal chance and if you don't make it -- it's because there's something the matter with you. Three different countries, three different recapitulations of one-dimensional man. Culturally and politically the metaphors of analytic science are contrary to long standing traditions for the Russians and Japanese. But that doesn't seem to help them much. All three countries have the same problem; massive school failure, the problem of runaway bureaucracies, the problem of centralized control of many, many forms of individual life.

Reduction and Reading

From the point of view of a socio-historical school, research on reading must start with an understanding of how this historical backdrop, how contemporary social-historical contexts, shape the nature of instruction and the production of school failure. Educational failure is done in the classroom, it is done at home, it is done on the way from the classroom to home, it is done in the workplace, it is done everywhere. It is *systemic*. If you're going to make a difference, you're going to have to be able to do it at many different levels of the system. Before focusing on the central role of the classroom teacher in the process of changing the system, let's consider what is a social historical approach to the problem of the reading curriculum.

Current theories of reading identify units at different levels of the overall process. At a "lower" level there are features, then letters, words and finally a whole text. Each time we go "up" in the system, we get to a larger and larger set of materials. It has been traditional to break the processes involved in reading into two kinds, corresponding roughly to unit size: *decoding* and *comprehension*. Creating such dichotomies is a process that our analytic traditions are good at doing. But dichotomies routinely produce a boring argument: Which comes first, decoding or comprehension? There are people who will go for phonics and decoding and there are other people who will go for comprehension; everybody will show that the others are leaving out *the* essential half of the process. But the joke is on us. Our friends at the Center for Human Information Processing who model reading processes on computers say, "We can demonstrate in infinite detail that any one level of the system is constructed of the interaction of elements operating on at least two different levels of the system." *It takes three to tango.* This rule applies to both the simulation of letter recognition (McClelland and Rumelhart, 1981), and the mature process of reading, which requires at a minimum (the writer and the reader) two people and the system they create between them.

Now the question is, if you have any idea that reading requires two people and a system of agreed upon symbols, what do you do with it? The people at the Center for Human Information Processing can simulate part of the process. The largest unit that they deal with is a single word. Their theories seem roughly correct. They're certainly modeling something very important. But they don't go far enough for the classroom teacher. Their theories and models break down when an adult is faced with a child who cannot read.

This is where a socio-historical approach can help us. We have documented how educators and psycholinguists try to teach reading to kids who failed to learn to read in school. Our data show the way in which, without special support systems, special *cultural* support systems, the individual teacher is at an enormous disadvantage in trying to get the kid over a major misunderstanding. The misunderstanding is that reading means "read the individual words so that they sound right." Reading as we see it most often in the classrooms of elementary school children *is* reading aloud. The fundamental nature of reading, from a socio-historical perspective, is that reading includes looking at the sign, knowing what's coming, knowing where you've been, knowing where somebody else is. These crucial facets of reading are absent for these children. Reading as a process of interpreting the world, is left out of the information processing theory altogether, and left out of systems of re-medial reading instruction.

Some children arrive at school with a pretty good notion of what their teachers understand the mature process of reading to be. Even though they have not begun to read themselves, they have been read to a lot, they have been around adults who do a lot of reading, or they have simply absorbed it from the larger culture. Other children arrive at school with almost no idea of what reading is about, or perhaps a very different understanding than the school wants to promote. In either case, many hours of observations in schools have shown us that if the child does not arrive at school with the notion that reading is a way to interpret the world, there is very little in early instruction that is likely to

convey that idea. They are initiated to letters of the alphabet and start in at what we think of as "the beginning." Once the beginning is mastered, the next steps can be provided.

The difficulty with this approach, theoretically, is that our theories of reading require that somehow the "top down" constraints of the next levels be present *at the beginning*. Practically, this means that children have to be able to comprehend at the same time that they decode. Creating a way to break the typical, common sense sequence (after all, how can you comprehend before you can decode?) is the goal of our research.

Reading as a Whole Activity

To solve the obvious paradoxes of re-medial reading instruction we create artificial social systems as information that embody the critical processes demanded by psychology. In order for the reading process to occur, in order for a unit to be formed between two people and the printed word, then there have to be interactions from "above" and "below." The fundamental necessity of reading-as-interpretation of the world is that you hold in *the image of reading as a whole;* you hold in the constraints of the whole so that the acquisitions of the parts always come under those constraints. Then you'll never create a byway that will lead the kid into a wrong mediation of his activity with print that then has to be *re*-mediated.

What we did was to use the idea of script and dramatic metaphor in a variety of different ways. Ann Brown and Joseph Campione at the University of Illinois worked with the project and gave us one protocol to follow. Their work employed a reciprocal questioning procedure with seventh graders who were good decoders, but poor comprehenders. It involved setting up a dialogue about the main idea of a text between a good, flexible tutor and a child: this dialogue eventually produced remarkable changes in those 7th graders' ability to read.

We changed the Brown-Campione procedures to fit our situation. We went to work with a population of poor readers from a public school. We ended up with 24 children in grades three, four, five and six. We gave them all the standard tests that would allow you to discriminate who's learning disabled from who's this or that. We elaborated on the Brown-Campione reciprocal questioning procedure, converting the two person game, into a script for reading which included the use of 3" x 5" cards to determine who got to play what role in the script for each paragraph that was read. The children and adults in the reading group/script pick a card from among these possibilities:

- The person who asks about words that are hard to say. (You do not have to admit that they are hard for you to read.)
- The person who asks about words whose meanings are hard to figure out.
- The person who picks who gets to answer the questions asked by others.
- The person who asks about the main idea.
- The person who asks about what is going to happen next.

Everyone in the reading group/script needs the text to be read, and a card to remind them of the role to play, and paper and pencil to jot down words or phrases or notes so they can be ready to ask or answer the questions implicit in the roles.

Remember that we are dealing with children for whom school is *not* teaching them to read. For these children teachers can be really hard to deal with: a teacher is a person who comes in and drills them on phonics and drawing in books and psycho-motor skills but they are not learning to read. The teacher is part of their public problem. We look and often act pretty much like teachers, and get a certain amount of disability from the identification.

To help unlock the process, we bring in undergraduates, and we make those undergraduates big brothers and big sisters to the kids. The undergraduates don't know exactly what they're doing in the reading group but that's okay, neither do we and neither do the little kids. If you're going to have a drama, if you're going to have communication, you have to have several participants, and no communication takes place if everybody knows ahead of time exactly what's going to happen. If we want communication to take place, there has to be discordinances; people have to be able to do some adjusting. If you take the communication notion of what a script metaphor is about, it's not something you build in a machine, it's something you construct *with people.* So, we hand out the cards. It could be that there are two undergraduates and let's say three little kids at different levels. We don't know precisely what's the matter with the children, we don't know what they can't do (except they don't read much). We don't know what they are doing. We want to see if we can trap them into doing the whole task. And if we can get them into the whole task, we then can do the diagnosis, that is, we can figure out what part of the whole task of reading these kids really don't do. At the same time, we are putting them into an environment where they can use their intelligence to discover what they can do about a problem. We distribute the cards, and the paper and pencils, then we hand out the text. There's no reading out-loud.

Why won't we allow reading out-loud? Because we discovered the same problem over and over again. As we have said, the theory of reading that we subscribe to is that reading is about interpreting the world. Therefore, when you're reading you're looking at the world and trying to figure out what's going on there. You're using the text to help you. Maybe it's the world of your own future; it is certain that you're not reading for its own sake. There is no such thing as reading "for its own sake." Reading always is, eventually, about something to do with other people. Reading, as Freire said, is a way of theorizing about the world.

The children we work with have a different notion. Their notion is this: reading is a system of mediation restricted to them, the teacher and text. In a particular question and answer frame where the questions are always given to them ahead of time, they only have to follow the learned grammatical and phonetic script. We found the following kinds of wonderful things happening: kids will read out loud, "John--accidentally--hung--himself--while--he--was--playing--after--school. The--police--didn't--know--why--he--did--it." They go all the

way through this. They pose questions about tough words. Someone picks the answerer. Then they arrive at the question, "what happened to John?" Written down on the page is "hung himself." They write the correct answer.

When a child reads aloud and it sounds correct, and then she correctly answers a comprehension question, the teacher has every right to conclude that the child is reading in the grownup sense of the term. But wait. In the next paragraph there is reference to a boy named Eric. We adults see immediately that Eric is a friend of John, the boy who hung himself. The young girl who displayed her reading ability a few minutes before starts calling for help. "Ms. Griffin! Ms. Griffin!" When Ms. Griffin appears the young lady complains. "How can I answer this question about Eric? He appears everywhere. It's not fair." We could see that there were several uses of the word Eric in the paragraph; maybe "everywhere" was okay to say. But what made that unfair? What was not fair?

What we now suspect is that the previous "comprehension" wasn't what it seemed. Our suspicions are confirmed when, after working through the second paragraph, the girl exclaims incredulously. "Is this true? He hung himself?"

Our subsequent analysis shows that even when she delivered correct answers, this girl was not "reading with comprehension." She was seeking physical matches between words: where the same name appeared in several places, she denied the possibility that it could be part of a single answer. This was unfair: the text was discriminating against her procedure for answering questions by using the word Eric too many times. Her earlier answer about Johnny hanging himself didn't mean that Johnny hung himself, it meant that there was something in the paragraph that could be copied to serve as the answer to the comprehension question. Only when her glances at the print were integrated into her real world knowledge did her reading activity come into contact with our usual concept of comprehension.

This scene is typical of systems of mediation for poor readers; they are truncated, artificially truncated, and the kids can get incredibly good at operating in them. They can get so good at it that you actually think they can read. You believe that they just do it very badly, but you don't get to question whether they are doing what you think they are doing or doing something totally different and somewhat bizarre. Most of our children don't have the slightest notion of what the system of mediation *we* call reading is about. How will they come to have it? At this point, let's go back to the alphabet and back to the problem of reductionism. And to the question of re-mediation. The system of re-mediation most commonly used is one that goes back to the system of the basic unit again. It doesn't re-mediate the overall understanding of what reading *is* or is for; it instantiates the reductionist theory and the analytic strategy that grew up with the alphabet: start with the small, the simple, and proceed to the complex. Of course you start with the simple. Only you've kidded yourself by calling letters of the alphabet or simple words simple forms of reading material. Insofar as the child *completely* follows the procedures you're talking about, for example, sounding out C - A - T, there can be no progress. In contrast, we argue that the procedures need to be taught as *cultural vehicles* to help children experience that emergent activity which will allow them to understand what you're talking about when you say reading.

The reductionist theory violates the fundamental principle that development always occurs within the framework of the whole. But psychologists and educators traditionally never teach reading as a whole activity embedded in a communicative system because it requires a social level of analysis that cannot be simulated on a computer. The activity of reading happens to have a social element in it and therefore our theory must also. It is for this reason that a socio-historical analysis of reading is so important to understanding what it means to re-mediate this activity for some children: it is also a good guide to the necessary conditions for acquisition of reading in the first place.

Now, it is not the case that people can get the idea of what reading is only if they go to school, and if their parents have been to school. And it is not that nobody can come to discover it in school. But, if you go and look in San Diego, California at what gets taught in remedial classes or the first grade, it is the bottom part of the basic activity of reading only. They don't get to the second part -- the act of reading as a whole, until they get the first part, correct reading aloud.

First things first. What a socio-historical point of view shows us is that we should be trying to instantiate a basic *activity* when teaching reading and not get blinded by the basic *skills*. Skills are always part of activities and settings, but they only take on meaning in terms of how they are organized. So, instead of basic skills, a socio-historical approach talks about *basic activities* and instantiates those that are necessary and sufficient to carry out the whole process of reading in the general conditions for learning.

When we create such lesson contexts we find that the kids who can't read in fact can do it! Are they all reading perfectly? Is this a miracle? Of course not; they have problems, a number of them have serious problems. For some you see across the board, successful take-off. Teachers report "a miracle has happened." For others, the kid is worse behaved in the classroom than he was before. He may have gained a deeper insight into just how deep a hole he's standing in. When a child sees another kid leap out and begin to experience success, he begins to have a better understanding of what a deep hole he's in and he goes down. That's development; we know that development isn't always achievement of a fixed criterion. Development is *systems reorganization.* Re-medial reading instruction requires social system's reorganization. From this perspective, you can teach kids to read who otherwise couldn't be taught.

There are some battles to be fought when endorsing this socio-historical approach to understanding literacy development. First, when you have people-acting-in-a-setting as the unit of analysis in psychological development, educational, experimental and child psychologists alike all experience difficulties. When Cole first started to develop these ideas at Rockefeller University, a great experimentalist said "I'm really surprised at you, Mike, for going into social psychology." It will be difficult to develop our systems approach so that it will be obvious to people that cognition is a social activity among

human beings, whether there is one person in the room or many. In our work we worry about how to establish credible evidence, how to be scientific. If we had two more hours, we would talk about the struggles of turning video tape from what appears to be a demonstration of total chaos into something that is analyzable and the analysis of which can be used to direct teaching activities. But this is enough for now.

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Cognitive Theory and Chicano Children's Oral Reading Behavior*

Richard P. Durán

Educational Testing Service

This paper presents ongoing research on Chicano children's discourse. The work has involved collecting naturalistic data in Spanish and English from four 7 to 10 year old children as they interact with teachers and other students at school and with parents and other children at home. Our research team is interested in studying how bilingual children's knowledge of a social speech situation and a speech activity affects the way they communicate, and in particular how children deploy various strategies to sustain interaction with others. We want our descriptive accounts and analyses of speech behavior to reveal how children understand the demands and constraints of interaction and how children accommodate their speech and accompanying behaviors in ways that reveal their communicative competence. We believe that studying the range and character of different kinds of knowledge that children bring to bear in control of their social interactions will greatly increase our understanding of children's oral behavior. In effect, we are suggesting that an enhanced understanding of the nature of communicative competence is enabled by examining how children's knowledge about how to communicate stems from both sociocultural and cognitive resources. This cognitive orientation to the study of communicative competence (without diminishing the fundamental improvisational nature of social communication) may also increase our understanding of how individual children learn to use language in the early school years and how their style of communication grows, develops and is accommodated to the learning and literacy contexts faced in school.

In regards to literacy, for example, elementary school children's oral reading of stories represents a significant communicative activity that functions as a precursor to extended literacy development. In the oral story-reading contexts we are studying, children are required to understand the individual words and sentences in a story as they read them and as they cohere as a narrative. They are further required to "tell a story" as they read it. This "telling of a story" as it is read builds on children's knowledge of what stories are like. It also builds on knowledge that children have about sociocultural conventions of story telling and on knowledge about the sociocultural characteristics of the audience toward which they are directing their oral reading. An additional, but very basic and necessary kind of knowledge concerns how to improvise an activity of "story telling" as it fits within the everyday, unpredictable exigencies that underlie any real discourse context. In particular, children's knowledge of what social structures are possible within a discourse setting and what the proxemic and social characteristics of a context are like as it evolves, affects the way they proceed in a task such as an oral reading of a story. Thus, the overall activity of oral story-reading is complicated in terms of the knowledge forms required to accomplish the activity. Because oral reading of stories assumes a social context and social contract for communication, the accompanying speech and paralinguistic signals indicate the many different forms of information required to establish and regulate the conduct of oral reading as a social activity and as a simultaneous referential communication activity.

Before describing our work, it will be useful to mention a few previous studies of minority or Hispanic children's discourse that have guided our own efforts. We will also mention some recent work by cognitive scientists and sociolinguists that has introduced the notion of "scripts" to describe knowledge structures that hypothetically underlie peoples' ability to recognize social contexts and to use language in recurrent social contexts. It is our present contention that in acting-out scripts, plots or plans for speaking that have a recognizable order and structure, children show that they rely in a strategic fashion on their linguistic and sociolinguistic repertoires when enacting a speech activity in specific contexts. Our work on Chicano children's narrative delivery points out some ways in which these connections can be made.

Some Relevant Research

A fairly substantial number of ethnographic research studies on minority and other children's communicative competence have documented the common-sense expectation that children's skills in communication are dramatically affected by the participant structure, the setting, and the nature of speech events. Here, we will just mention three studies relevant to our work rather than overview this research area in detail.

*This research has been supported by the Educational Testing Service and the National Institute of Education.

Perhaps the best known ethnographic study of cultural influences on ethnic minority children's discourse behavior was done by Philips (1972). She found that Native-American children from the Warm Springs Indian reservation in central Oregon were reluctant to answer their teachers' questions publicly in the classroom, but these same children were found to interact actively with others in group classroom activities. Philips' research on the children's communication patterns outside the classroom revealed that these Native-American children have social norms for communicating that make public question/answering inappropriate. In addition, it was found that Native-American children preferred to interact with other children rather than with adults, who imposed their own rules for communication.

Philips developed the notion of *participant structure* to refer to the ways teachers organized verbal interaction with students. This term, participant structure, has since come to refer more generally to the ways of speaking and interacting shared among interlocutors in a setting and speech activity.

The importance of participant structure in ethnic minority children's successful conduct of reading tasks is highlighted in the research of Au (1980), on the effectiveness of KEEP (Kamehameha Early Education Program) in Hawaii. In this program, first through third grade children of native Hawaiian descent are taught reading in small groups of four to six children seated around a teacher. A significant part of each reading lesson involves the teacher allowing and encouraging children to break into the stream of conversation about a story book when they have something to contribute to what the adult or another child is saying. Anthropological and linguistic research on native Hawaiian cultural practices suggests that informal group interaction in reading lessons is educationally successful for children with Hawaiian backgrounds because it resembles the cultural storytelling practices of Hawaiian adults. Although the structure of KEEP reading lessons, and the reading curriculum as a whole, is much more complicated that described above, there is substantial evidence that the KEEP children are more willing participants and effective learners in reading lessons because they can draw on their own cultural and social resources for communication.

The research of Au (1980) is significant to our own research in that it suggests that there are distinguishable patterns of social participation in enactments of oral reading. Furthermore, in the resulting joint patterns of participation, KEEP children assume distinguishable functions and roles in contributing to a story. In a sense, the school activity of a reading lesson is orchestrated around socially shared patterns of participation which occur improvisationally and which tend to be distributed differently according to the major parts of a reading lesson activity.

The effect of participant structure of Hispanic children's discourse behavior with school related tasks is highlighted in the ethnographic work of Carrasco, Vera and Cazden (1981). These researchers found that a second grade bilingual child, Veronica, exhibited a dramatic difference in fluency in describing knowledge of a language-arts spelling task when she answered questions about the lesson put to her by her teacher as opposed to when she engaged in a peer-tutoring sequence with a male Chicano student. When interrogated by the teacher, Veronica elaborated very little about the purpose and nature of the spelling task; furthermore, her responses in English were ungrammatical, leading the teacher to infer that Veronica was unskilled as a speaker as well as uninformed about the lesson.

In contrast, in the peer-tutoring sequence, Veronica was found to be highly fluent in teaching the language-arts spelling task in question to another student. In this sequence, Veronica displayed a thorough knowledge of the task she was teaching, and knowledge of how to maintain the role of teacher when distractions intervened. Her communicative effectiveness was marked particularly by her use and timing of directives, such as requests to spell a word and to pronounce it in English. Her use of directives was also accompanied by paralinguistic cues involving stress and intonation which helped strengthen the force of her commands when they were not initially obeyed. In addition, Veronica's tone or key of discourse delivery displayed elements which could only be recognized by a child from a similar Hispanic background. This was exemplified on one occasion when Veronica gently chided her tutee for being "dumb" or mentally slow using an idiomatic expression in Spanish. She delivered the expression with appropriate stress and intonation, emulating an adult's gentle and affectionate chiding of a child.

The three examples of ethnographic research cited suggest that the display of children's sociolinguistic repertoires is intimately linked with the participant structure of a communicative activity. We believe that central to children's control and improvisational use of their linguistic and sociolinguistic repertoires is their knowledge of the activity types within which language is used, coupled with their knowledge of how to draw effectively on their speaking ability as activities evolve and shift.

Recent research in cognitive science and sociolinguistics suggests some ways in which we might describe knowledge of activities and participant structures from a psychological viewpoint. Freedle and Durán (1979) Nelson and Gruendel (1979), and Corsaro (1983) have suggested that children's knowledge of activities in which speech occurs might be represented by knowledge structures activated from memory which are termed "scripts."[1] A script represents knowledge of a network of possible major subactions or "scenes" which make up a larger culturally salient activity such as reading from a story book, participating in a birthday party, etc. Scripts identify culturally normed ways of acting in situations that are salient in and of themselves as recurrent activities within a sociocultural setting and community. Apart from the scenes or major subactions which a script specifies, there are other components of a script which describe: the roles and relationships of people within scenes; the environmental objects that are relevant as "props" within scenes; the "track" or specific version of a script -- as, for example, *child* versus *adult* birthday party; the conditions in the social or personal world which signal the start of a script; and the social or personal conditions which signal the ending or closing

[1]A review of similar approaches to cognitive processes guiding discourse behavior is given by Tannen (1979).

of a script. The above named researchers also suggest that scripts, as knowledge structures, may contain information about how communicative interchanges occur among script participants. Knowledge about how communication occurs in a script refers to the sociolinguistic repertoire that is expected of participants in a script. Thus, in the oral reading of a story there is a general assumption, in U.S. classroom culture, that a reader has the floor and will read a story directed towards an audience that consists of other children who are passive listeners. Listeners are expected to evidence signs of attending and listening to the story reader, yet the teacher is free to interrupt or change the course of a child's reading.

The notion of a script as a knowledge structure reflecting people's understanding of activities is not adequate, in and of itself, to fully explain how people actually interact in any setting. Sociolinguists such as Bennett (1980a), Erickson (1982), Erickson and Shultz (1977), Gumperz (1981), Gumperz and Tannen (1979) have pointed out that oral communication in a setting has an intrinsic improvisational quality which cannot be reduced to a simple plan of how to say what, when. The immediate characteristics of speech in a setting are the result of locally negotiated relationships among speakers, and exigencies that arise as communication proceeds can dramatically affect ongoing discourse. Nonetheless, within the confines of an activity such as oral story-reading we would expect a story reader to behave as if he or she had a "sense of story reading" as an activity that would make some strategies of discourse more likely than others. In our work on Chicano children's discourse, we ask how a child is able to display a "sense of story" to others in an oral reading activity at home. We here borrow the term "sense of story" from a recent paper on this topic by Cook-Gumperz and Green (in press). In our concern with a "sense of story reading" in addition to a sense of story content, we are interested in the story reader's projection and control of the social role of story reader as well as story delivery in terms of the accuracy oral performance vis 'a vis the text being read. In looking closely at repeated oral story-reading performances by the same child, we hope to learn how to describe an individual child's sociolinguistic repertoire in terms of redundancies or systematic differences that tend to occur across different story reading occasions. Our belief is that children mentally store and subsequently rely on strategies for communicating in particular ways that fit their identification of an activity and audience for which such strategies are useful.

In our videotaped data and accompanying observational field notes of Chicano children's oral reading we are presently focusing on identification of strategies of two general sorts. The first general strategy concerns how children organize and coordinate the social act of story reading by manipulating the perspective or point-of-view of their speech, and how this strategic use of perspective aids in audience perception of a story's content. We have adapted our own notion of perspective from theoretical work in discourse analysis by Bennett (1980b) and Fillmore (1974). In examining the perspectives projected in children's oral reading we are attending to features such as the following in point-of-view speech:

- reading from an omniscient perspective assumed in the text of a narrative.
- embellishing a story by introducing information not stated in the story text.
- quoting story characters, as evidenced by emulation of a character's intonation and prosody.
- interrupting the reading of a story to request reading help from the audience.
- stepping outside of the role of text-reader to help an audience in its understanding of a story, as in the display of a story picture.
- stepping outside of the role of story narrator to manage an audience by, for example, requesting attentive behavior.

The foregoing perspectives are merely exemplary. Other strategic ways of projecting story reading or story content to an audience are conceivable. We are attempting to identify the range of perspectives evidenced by children over repeated occasions of oral story-reading. The central point of our approach to perspective and perspective shifts is that we can identify molar units of speech activity according to the perspective that a child maintains and changes as he or she reads. These molar units arise and shift improvisationally as a child enacts parts of a story-reading script, with certain perspectives and perspective shifts more likely to occur in certain parts of a story-reading script accommodated to an occasion of story reading. One of our present research goals is to develop a profile of recurrent perspective orientations that individual children show in different parts of a story-reading activity. We can thus appreciate the strategic use of perspective by children as it influences their communicative effectiveness as story readers.

The second general set of speech strategies we are investigating are termed "contextualization cues" by Gumperz (1977). Contextualization cues or strategies refer to a speaker's manipulation of intonation, prosody, stress and gesture in speech in order to assist listener's reception of an intended message and its nuances.

Based in part on previous research on narrative delivery by children (Collins and Michaels, 1980; Gumperz and Kaltman, 1980; and Scollon and Scollon, 1982) we expect that control of intonation, prosody, stress and gesture during the reading of stories should be used to emphasize: a) important points of information in a story; b) contrasts between omniscient story narration and quotes from story characters; c) rhetorical questions asked of an audience about a story as it is being read; and d) prompting of story audience members to describe the pictures that accompany a story. Note that the execution of strategies involving manipulation of audience perspective by an oral story-reader, as discussed earlier, creates situations in which strategies involving contextualization cues are likely to be utilized to enable the audience to attend to a new form of message.

Some Preliminary Data

The following are examples from our data of children's oral-reading showing use of perspective and use of contextualization cues. The example below comes from a six-year-old child, reading from the

omniscient perspective and subsequently shifting to an appeal for help from an audience in reading.

> This is George. He lived with his friend the man with the yellow hat. *And* was a good little monkey. . . *.and he was* always . . . *.how do we say CURIOSO?*

In this example the child begins to read the text of the story in a straightforward fashion, reflecting the omniscient perspective of the author. The underlined portions in the latter part of the example mark points at which the child's speech deviated from the story-book text, either with regard to words uttered or pronunciation of those words. The word "CURIOSO" is capitalized to stress its occurrence in Spanish as opposed to English. The latter portions of the example illustrate one manner in which a child may appeal for help in oral reading. The child here demonstrates knowledge of what is being read, although utilizing a language system -- Spanish -- which is different from the language of the text. The example also demonstrates how a child's perception of an informal participant structure occurring in a home setting may allow him or her to request direct help from others to accomplish a reading activity. In our observations of oral story-reading in classroom settings we find that a child's deviation from a text is more often viewed as inappropriate than as part of a strategy for learning how to read.

The following discussion examines children's control of oral reading perspective as it co-occurs with the use of contextualization cues. This example of a six year old female quoting a story character shows evidence of stress and intonation control, conforming to the language of the story text.

> If *you* become a mountain climber. . . .
>
> Say the little bunny. . . .*I* would
>
> be a *cracurs* in a hidden garden

["Cracurs" is a mispronunciation of "crocus"]

In delivery of the utterances "If you become a mountain climber," and "I would be a cracurs in a hidden garden," the child used a noticeably higher pitch of speech than in delivery of the utterance "say the little bunny." Furthermore, the range of intonational shifts within the two utterances of the quoted speech mentioned above was richer, more melodic and accentuated -- like that of animated speech in a conversation in process -- than was the case for delivery of the utterance "say the little bunny" which was delivered with a lower pitch and less variant intonation. Shifts in the intonational pitch during reading are suggested by the shift up or down in the wavy line drawn beneath the child's utterances. Sudden increases in pitch in the quoted speech coincided with stressed words (underlined), the latter followed by a distinguishable pause before continuation. This example suggests that the child in question was capable of recognizing a shift in the point-of-view projected in a narrative's text, and using contextualization strategies to communicate this shift in perspective to an audience.

Here is an example of a child stepping outside of the text-reader role to help an audience appreciate a story:

> . . . .If you become a sailor boat and sai. . . .sail away from me. . . .say his mother. I will become the wind and blow you where I want you to go. . . .This is the picture.

The utterance "this is the picture" which was not in the text was accompanied by a change to a flattened intonation, with a lower pitch and tonal range than the preceeding utterances, and also by the physical act of turning the book's picture toward the audience for display.

Finally, here is an example of how a young reader in a story setting might step out of the story-reader role to manage an audience.

> . . . .No; Pati, I was reading this. . . .

This comment was uttered by the reader when her younger sister attempted to take away the story book. The utterance was made in a forceful fashion, with more amplitude and stress in delivery than was used in the reading of text.

Our observations of children's oral reading behavior at home and school, and evidence of the sort we have just cited, lead us to believe that the children are following general plans or scripts for how to go about reading to an audience (Durán and Guerra, 1981). These plans or scripts are not strict ones; rather, they are marked by a set of intentions or "plots" -- to borrow a term from Fred Erickson -- which guide oral reading in a given participant structure. In oral reading as a referential and social activity in U.S. mainstream culture there is a general agenda of "business at hand" centered on enactment of a sequence of scenes from a reading script which are expected to occur in a fixed order -- e.g., beginning a story, reading the body of a story, and ending a story activity. Within each major scene of a reading script, there are both expectations of what is supposed to occur -- e.g., sequentially reading aloud story pages to signal the structure and direction of a story; turning storybook pages, etc. -- and also options in a story reader's behavior appropriate to an audience and social setting which accompany expected behavior within oral reading scenes. These options are appropriate behaviors for story reading, but are not necessarily an immutable part of a story reading script for a child; furthermore, options may be idiosyncratic to individual children.

An example of how options in story reading occur appears, as cited earlier, in our observation of one child's strategy of turning storybook pictures toward an audience accompanied by a request that the audience look at the picture and its contents. The shift in perspective which this story reader exercised was marked by comments such as "look at the pretty picture," often of a formulaic character, with use of a characteristic intonation and prosody appropriate to utterance of the formula in a story reading setting.

In our observations of children we have found that individual children seem to exercise some regularity of style in oral reading and performance of an oral reading script. We have detected the existence of these styles by repeatedly observing children read a number of story book texts in a home setting and also, to some extent, in a school setting. We have noted that we can isolate certain "habits" of communication which children follow in terms of characteristic shifts in perspective in oral reading and in an accompanying utilization of familiar

types of contextualization cues. Our observations show that, across children, utilization of perspective strategies in oral reading seems to be related both to the children's personalities and to their fluency in Spanish or English as the medium of communication, as well as to the characteristics of settings and texts. At present we hypothesize that children, in their cognitive realization of a participant structure and script for oral reading, also make subconscious decisions about how they project aspects of their own personalities in the act of oral reading. For example, we tend to find that female oral readers rely more on certain shifts in perspective and certain gender-typed contextualization cues than male oral readers.

In passing, individual differences aside, it is essential to point out that children's knowledge of an oral reading script for a genre such as stories, is by no means invariant either across cultures or even within different social groups and settings within the same culture. These caveats for evaluating the generality of findings of work such as ours are brought out well in the research of Scollon and Scollon (1982) on contrasts between Alaskan Athabascan's perceptions of the organization of story structure versus mainstream U.S. person's perception of story structure and story delivery. In addition, the ethnographic work of Brice-Heath (1982) in the black Trackton and white Piedmont communities in Carolina demonstrates that the meaning and function of literacy events is both a community and extended, socioculturally determined phenomena that cannot be interpreted simply from stereotypes for literacy events held in the mind of a highly literate mainstream cultural group. In our own research, issues regarding the sociocultural and community origin of discourse strategies used by children in oral reading remain an area for our further investigation. In modesty, we must admit that a fuller interpretation of our findings on children's discourse strategies would require a deeper and more intensive analysis of literacy in our children's community than we have resources to allocate in our work; nonetheless to the extent possible we are conducting an informal survey of parent's and children's home, community and school literacy practices.

The plans for pilot research we have described here are longitudinal in nature. At present we have collected video and audio taped samples of four children engaged in matched narrative tasks in each of two successive years, and we are extending our observations into the coming year, when our children will enter a bilingual fourth grade classroom. We have included reports of second grade children's discourse only in this paper.

By studying our longitudinal collection of discourse, accompanying field notes, and field notes on children's home and school social life, we expect to be able to generate case histories describing changes in children's oral reading behavior across three years, commencing with the second grade and ending in the fourth grade of school. Following this strategy, we hope to learn more concretely how children's dual language background and communicative strategies interact and are evidenced in development of their reading literacy skills. A longitudinal course of study seems critical since the story texts which children encounter across school years will differ in their structure and manner of presenting story information. Thus, some of the changes we expect to observe are due to children's cognitive-linguistic development and also due to the text materials they encounter at different age levels.

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Narrative As Social Science: A Case Study

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Beginning perhaps with Geertz's famous account of the Balinese cock-fight as a "story they tell themselves about themselves" (1973, p. 448), there has developed in recent years interest in the view that society can be read like literature as a series of texts; that the human mind itself is basically a narrative activity (Mitchell, 1981); and that the presentation of social science information may require a narrative accounting (Hymes, 1980, p. 98).

In psychology the view that the mind is basically a narrative activity has received support both in the study of patient's accounts during therapy and in the study of what sleepers say they are dreaming when awakened at night. Thus Schafer (1981a, 1981b) has given an interpretation of the psycho-analytic dialogue as itself a set of stories told and told again by the patient to the analyst, and then retold by the analyst in his documentary accounting.

> "Those traditional developmental accounts over which analysts have laboured so hard, may now be seen in a new light; less as a positivistic set of factual findings about mental development and more as a hermeneutically filled in narrative structure." (Schafer, 1981b, p. 49)

Foulkes from his extensive studies of night dreaming says:

> "It is easy to lose sight of the fact that dreaming is a form of thinking, that dreams are not experiences that 'happen' to us but stories that we make up with our own minds . . . How is it possible that, without deliberately trying, we construct so effortlessly imaginative yet internally coherent narratives during sleep, stories that seem never to hem or haw but that glide along with rapidity . . ." (Foulkes, 1982, p. 8)

In Foulkes' statement we are being told that the mental stuff of night time emerged in storied form, at least as reported to the investigator. In Schafer's case also, the reality to which the psychoanalyst and his patient attended in their sessions is said to have emerged in the first place as a narrative account.

In the present paper we wish to examine the extent to which it is useful to describe children's play from the same narrative point of view. But in addition, we wish to assess the broader question of the role of narrative in social science. Given the phenomenological viewpoint that we construct reality through our own interaction (Mehan, 1981), then to what extent can we say that reality so constructed is a narrative, a "text" to be read over the shoulders of our informants (Geertz, 1973). Why can't we say that what we are seeing is a ritual, or a pastime or a drama or a game (Geertz, 1980)? Which of these is the true way of knowing what is actually going on when people (in our case) play together. Which is the appropriate epistemology?

But beyond that we also raise the question of how we, who look over the shoulders of our informants, read those texts. When Geertz looked at the Balinese and reported on their cock-fighting, was the event itself the narrative, or was it that his documentation took a narrative shape? Geertz, although admitting that his was a metasocial commentary, pretty much took for granted that he was telling us the way in which things really took place. As he said, he was trying to convey "the distinctive tonalities of their existence" (1976, p. 223). We must admit the possibility, however, that the cock-fighting could be perceived in an entirely different way and that Geertz converted it into a narrative himself. At least we can distinguish between narrative as the way things are perceived to be known (narrative as epistemology) and narrative as the way we are reporting the way things are (narrative as documentation). This distinction seems appropriate in the case of Geertz because of his self-conscious use of the "narrative metaphor" (1973, p. 449), but in the cases of Foulkes and Schafer this distinction is simply not made. Beyond this issue is the problem that narrative is itself a form of literature and therefore susceptible to many kinds of literary classification and interpretation. For example, when Foulkes is talking about dreams as stories, he means dreams as fictional stories. But when Schafer is talking about patient and therapist statements as narrative, he mostly means personal narratives or personal fictions. So which kind of narrative are we talking about if we say society is a bundle of texts or the mind is a bundle of stories? Further, there is a host of other distinctions that can be raised about narratives. There are for example those who have attempted to perceive narratives as non-chronological events. In fact, the general tendency in modern narratology has been to conceptualize narratives as logical and not as chronological phenomena (Barthes, 1977). In this approach one focuses upon the various paradigms, functions and oppositions that are reiterated throughout a text and are useful in its interpretation. These approaches have been powerfully illuminating, as the names of their sponsors Levi-Strauss, Jakobsen, Greimas, and Todorov, imply (Mitchell, 1981). And yet, paradoxically, they move the use of narrative nearer to the idea of a positive science of laws, and away from the inter-

pretive science use of narrative as a search for meaning which is what was being advocated by Geertz, and implicitly also by Schafer and Foulkes. On the other hand, there is another body of philosophical and literary theory which argues that people live in a temporal world and therefore, their use of narratives should never neglect these temporal characteristics (Ricoeur, 1981).

It is these issues of narrative as epistemology, as documentation and as literature that we bring to our quite limited case of an adult playing with a child. That is, we ask whether the way people live out their lives is the same as the stories they tell about their lives, and whether either or both correspond to literary narratives.

A CASE OF PLAY

The case in hand was a study of the play of one seven-year-old girl in which the investigator fully participated on 12 different occasions from three to five hours per episode over the course of one year (Kelly-Byrne, 1982). Most of the sessions were audio recorded and then reconstructed in terms of a phenomenological description as a series of events emerging from a relationship between the playing child and her play partner and adult.[1] The investigator, the adult player, was an expert in child drama and entered into this relationship in a highly permissive manner. To the best of our knowledge, no prior study of children's play has been of this character. Play is usually simply observed (Piaget, 1961), diagnosed (Axeline, 1964), manipulated (Bruner, Jolly and Sylva, 1972), or modeled (Smilansky, 1968), but not participated in except quite incidentally (Erikson, 1950, p. 204). The issue is whether we can say, as Schafer could, that the ludic world constructed by these two players emerged in a form which is best described as a narrative. That we might have expected this to be the case was supported by past accounts of children's play (Hartley, Frank and Goldenson, 1952) and more recently in Garvey's (1977) discussion of preschool children's play formats; treating-healing; threat-danger, etc.

Session I: Synopsis

What became apparent in the very first session was that, unlike the Schafer psychoanalytic case, considerable time had first to be given over to negotiation before the play could begin. In Schafer's case the contract was presumably made beforehand and was standardized, leading him to ignore it as a part of the encounter. In this case the child (Helen) entered the relationship wearing her public face, which was aloof, competent, and controlling. The investigator came as babysitter, and when asked by the child what they should do, and responding that she, the investigator, could read a story, she was turned down in a superior way with the statement that she, the child, could already read herself. Having thus had reading activity excluded, the investigator asked the child what she would prefer to do instead. "Don't you think we had better get to know each other first," Helen said rather haughtily. On the adult's agreement Helen then said, "Okay. But then you have to come to my room." As they walked up the stairs and they stood on the threshold of her bedroom, Helen stopped short and announced, "I tell no one my dreams, secrets, secret language or about my superheroes, so don't ask about them." This complex interdiction singled a negation of that order of behavior which deals directly with those things close to the personal self and by implication asserted the opposite. What the child implied was that her partner and she could share a ludic relationship in her bedroom, a partner which by its paradoxical nature would deal with a play upon these worldly phenomena of her inner life, her secrets, etc. but not deal with them in everyday realistic terms. As Bateson (1972) says, we say the opposite of what we mean in order to mean the opposite of what we say. In short, Helen really did want to deal with the issues of inner life (which she had just barred), but she could only deal with them within the ludic frame. To this point in Session 1 (and we have greatly abbreviated the matter here), the relationship is concerned with negotiations about the way the relationship would be framed. Many modern play theorists after Bateson have put a primary stress upon this kind of activity as central to play activity (Garvey, 1977; Schwartzman, 1978). When they had entered her bedroom, Helen asked the adult if she could fly, and they began to pretend flying about the room. Helen then asked the adult if she knew any secret languages and the adult obliged with one of her own. What was happening here is that two play forms (flying and languages) were being used as an initiation rite to see if the adult was willing to be a play participator (not a real participator). Following this apparently successful interaction, Helen introduced her secret land.

> "I know this land, Balululand, where thy speak secret languages very well. I was there as a baby. I grew into a very powerful princess with magical powers. I was involnerable, the most beautiful girl. I could conquer everything. My father the King was dead. Killed by enemies . . . the swabs. It was always war there and we had to make it peace, be nice to everyone care about everyone, like I did."

After this very clear narrative statement, Helen informed the adult that she liked her and in an exuberant fashion proceeded to engage in singing, dancing, chanting nonsense and laughing, much of which was of a "regressive" character. From there she proceeded to lay out some animal toys on the floor and invoked the investigator's help in enacting a story of the good guys against the bad guys. This breakthrough into performance lasted for hours after which Helen announced "I like you, you are a good actor and a player."

As this brief synopsis of a four hour event indicates, what occurred in this play relationship with the child was much more than narrative, but that narrative did have an important role. In the beginning the child used negations (no reading), interdictions (no secrets), spatial management (bedroom) and initiations (flying and secret languages) to manage the social relationship between the two participants. Her major plan for play was outlined in a narrative way, but then there was a kind of festival playfulness that followed (nonsense,

[1] As is customary in social science, throughout the discussion of this case we have used the impersonal voice for the investigator. A more thorough phenomenological rendering would require us to give the investigator a name and the assumption of a personal voice. This is however a convention of the medium, rather than a change in the message (Shutz & Luckmann, 1973).

etc.), and that in turn was followed by something called a story of good and evil. This story was acted out and made up by the two participants as they went along. As enacted, the story was more of a live drama than it was a narrative.

In sum, we cannot say, as Schafer was able to, that the meaning of this relationship emerged as a narrative. It was much too complex for that. The sequence of initiations and interdictions actually bear analogy with a rite of passage through which the investigator must proceed before being allowed into the inner sanctum. This is no mere metaphor, because after the playing the two engaged in a collusive pact with further secret languages against the parents. There is a very real sense in which they had separated from everyday reality in a state of friendship and collusion that changed the nature of that everyday reality for both of them. One might wish to argue that exactly the same thing occurs in psychoanalysis but that Schafer overlooked it, by attending only to the content of the relationship and not the context. For patient and therapist also undergo such a separation, a period of luminality, and a return to the world in a new form. In our situation what is being called play is quite complex and of at least three varieties: (a) play used for mimicry and as a test of membership, a practice well known when younger children attempt to pass through the boundaries into group play (Sutton-Smith, 1971); (b) play as festival, regression, the most playful heedless kind, full of laughter and nonsense; (c) the part that was given a scenario in narrative terms in this episode, but was in fact worked up as a novel series of dramatic enactments by the two participants. This dramatic play seemed to be the part where the "inner secrets" were made manifest. As Schafer's patients grasped their meanings through the accounts or stories they told, here also but in a much more open, random way (because two players were involved), the child, Helen, formulated her meanings through ludic action. So the means of knowing here were ludic, not narrative.

Sessions II-V

In all subsequent sessions only a minimum of negotiations of the social relationship occurred. It was clear that this had been established by the successful outcome of the first session. Hence forth, negotiations were more in the nature of stage managements and were directed to the roles and content of the play itself, which is to say that the rhetoric (Burke, 1950) never ceased but its direction was now within the community of players, not between those who would become a community of players. In addition, there was increasing time given to consummating the relationship as friends by sitting watching television together, during which Helen snuggled alongside the adult. Most importantly, the length of the enacted dramas increased enormously in each succeeding session. Although the child had become quite flexible in everyday relationships (no longer dominant and haughty), in the enacted frames she still insisted on being the boss to her compliant adult. In the usual course of play therapy, when the everyday relationships improve in this way the therapy typicaly finishes. What we see here, however, is that play, which has a name for its flexibility in much current theorizing (Lieberman, 1977), was in this relationship, the last bastion of the child's inflexible dominance. Her need for power and control, which she has given it up everywhere else, continued to be manifested in this area.

Sessions VI-IX

Six months into this play history a change began to occur. Now Helen was beginning to allow the participant adult a more active role in the drama. Her play of mythic figures, heroines and Gods, became less of a puppet play, and more of an open-minded almost game-like event. There was increasing uncertainty of outcome for Helen as the adult began to make her own independent input. Here the empathy of the adult with the child's wishes was critical. She had suggested that the tape recorder be their slave, and there were long discussions over whether the recorder should be on only during their enactments, or should also record their planning. The child did not want it to record their planning, from which we surmise that it was only in the disguises of play that she felt her inner secrets had their paradoxical safety. The planning itself was still in the everyday world, and still likely to lead to some "exposure" of the inner self. Within the stories there was decreasing attention to good and bad mother figures and forces of good and evil, and increasingly there was veiled attention to the relationships of men and women. In addition, the child now took the adult's name as her own in the play and assigned the adult to a child role, although these roles were also reversed on various occasions, showing increasing identification with the adult within the play itself and increasing flexibility in shifting roles within the play. It is clear that there was a distinct division between narrative as the talking about what would be done, and playing, where the drama took place. The narrative tended to be schematic, drawn from past enactments, or from literature or television. It was more in the nature of a stage set than the place where most of the new reality occurred. The narrative set the context but never confined the enactments which were much livelier and much more open-ended than the storied scenario might imply.

Session X-XII

By the last three months of the year this seven-year-old had become an eight-year-old and, according to Freudian narrative, had passed from oedipal to post oedipal concerns. What was interdicted in the first session now preoccupied hours and hours of time. There were endless discussions of the narrative of the play without ever getting to do the plays. Narrative could now do the job all by itself. In addition, there was conversation about some intimate details of the child's and the adult's personal life. Conversation and intimacy took the place of play and indirection. So in effect, stories about play took the place of play. Stories about reality (Schafer's kind) had begun to emerge.

So we conclude that what occurs in this play relationship, a very special one, requires much more than a narratological approach. What we appear to have is play embedded in narrative, which is embedded in a ritual for establishing a relationship. But just as clearly there were kinds of play which have nothing to do with narrative (festival and initiational), even that play which worked in close harmony with narrative constantly

escaped and enlarged its boundaries. We suppose that other intensive samples of child-child or adult-child play would not annul these generalizations, although they would presumably add many other complexities and novel inflections. Towards the end of the relationship what was occurring was much more clearly the adult narrative sharing that Schafer had in mind, as well as an index of the rapid development that occurred for this child in this relationship. Obviously, the latter has some important propaedeutic implications.

DISCUSSION

Narrative as Epistemology

Our conclusion has been that the full relationship of these two people who play could not be comprehended simply as a text. They used ritual to get their act together (interdictions and private spaces); they used play ritually as a form of testing (mimicry of flying and secret languages); the child manipulated the adult in a game-like way; they used play thematically as acted out narratives; they discussed the play to be enacted as if it was a narrative. When the ludic drama was over they engaged in festival hilarity. In addition, the relationship of child and adult to the child's parents over this period of time took on the character of a social drama as discussed by Turner (1974). Basic relational conflicts were worked through in this arena. It is our thinking, therefore, that when one takes a relatively continuous relationship of the kind dealt with here, all these current metaphors of symbolic forms may be found appropriate to different phases of the matter being studied. They are not contradictory, they are partial to selected aspects of the continuing relationship. There was no abiding reason therefore for Geertz to select "text" as metaphor over "ritual" and "pastime," nor for us to ignore the contributions of Goffman (1969) and Turner (1969). Schafer can confine himself to seeing his therapeutic relationships as a bundle of texts, only because he has left out of the account the conventionally accepted psychoanalytic rituals of engagements, greetings, acceptances into therapy, payments, etc. In sum, given our experience with this case study, although we see virtue in analyzing play as a search for meaning on the part of the two participants, and as an embodiment of the social construction of reality, we also see that the variety of metaphors that have been spawned in modern interpretive science, i.e., games, texts, play, rituals, and dramas all have relevance to some limited aspects of these social constructions of reality.

As Documentation

Having made these claims we come to the paradox that they are being presented here largely in narrative form and not, for example, in game or dramatic form.

For example, in the above account there is the story of the 12 sessions, with the beginning five, the middle six to nine and the concluding ten through twelve. There is the inherent plot of the bossy child gradually changing into a flexible child, of power manipulations turning to symbolic dramatic involvement and of these turning to friendly and direct conversations about matters of intimacy. The final resolution results in a more mature and sophisticated child. Of course, reports about the play habits of children or any other matters in social science do not have to be couched in narrative form. It is arbitrary from a scientific point of view whether we present our conclusions first, then our methods and finally our introduction. Natural science usually goes as far as possible in presenting its results in non-narrative forms by graphs, tables, etc. Nevertheless, it is typical for an abbreviated narrative scheme of introduction hypothesis, methods, results and conclusions still to be adopted. Perhaps the habit of human temporality clings residually to the ritual temporality of the scientific article. Perhaps it is a reluctant concession to contextualized human meanings by the decontextualizing natural science model of universal or probabilistic laws. Whatever the case within the natural science model, however, within the interpretive science model narrative reporting is advocated because it gives hue and texture to the subject matter of human meaning (Hymes, 1980). What our own results above suggest is that narrative may actually be more appropriate to the reporting than to the epistemology, more appropriate to looking over the shoulder than to phrasing what is being looked at.

As Narratology

There has been no suggestion in what we have seen, or in our accounting of what we have seen that we should use other than a temporal narrative. It might seem difficult to talk about the temporal phenomenon called the social construction of reality, which is an ongoing matter, without using a temporal form of narrative reporting. On the other hand, there are complexities within the present article which are clearly not of that chronological sort. The notion that socially constructed reality can be at the same time a conglomerate of ritual, play, game, text, festival and drama, and that although these can be arranged in a narrative sequence, they are largely matters of interpretive perspective, is not itself a temporal narrative notion. It is a logical notion, and we have introduced it into this article as a critique of the view that reality (in our case, the play relationship) is simply a narrative. If it is a narrative, it is a narrative analyzed in terms of functions or genres. We have here an implicit philosophical theory of a multilineal sort about a variety of genres as root metaphors being used to critique theories of social construction that are simplistically narratological.

We do not agree with Geertz, therefore, that the Balinese cock-fighting was a story the players told about themselves. It was a story he told us about them, and although he labeled what they saw as a *text*, his account was as much a defense of the use of literary metaphors (as a form of functional analysis) as it was itself a straight storied account.

The import of the present paper is that in the social construction of reality as narrative, matters are more diverse than they may have seemed. If one is to perceive narrative, and to document narratively, it is useful to distinguish these perspectives from perspectives arising from other genre metaphors for epistemology and documentation (games, etc.).[2] It also means, if we may

[2]We have refrained from any other "deconstruction" of our own account in order to focus with some clarity on the issue of social science as narrative as this may be applied to our case sample of a seven-year-old at

return to our original statement, that mind treated as a kind of narrative, is too simple a view to be countenanced by the kinds of perspectives presented in this article.

play with an adult. One could have raised questions, for example, about our own logic of dividing our treatment into narrative as epistemology, as documentation and as narratology. It is clear that this article itself is governed by that logic rather than by narrative. We have used narrative as documentation only in the case study section of this article.

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Negotiating Classroom Interaction

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Researchers interested in the process and outcomes of education have become increasingly aware that academic success is not solely dependent on academic ability (see, for example, McMillan, 1980). Children not only have to learn to perform academically, they must also learn how to perform in an academic environment. Much of what children must learn in school is the implicit social structure of the classroom, or what Jackson (1968) has called "the hidden curriculum." According to Jackson's argument, teachers' evaluation of students is largely based on adherence to the institutional rules and regulations of the classroom. The teacher rewards "good" students -- those students who do what the teacher says, sit quietly, work neatly and generally follow the classroom routines. This is most evident in the practice of rewarding students for "trying." What this means in the context of classrooms is that a student is following established procedures even though academic performance is poor.

Mehan's (1979) observations of classroom interactions support and extend Jackson's arguments. From his analysis of typical classroom lessons, Mehan derived implicit performance rules that children must know in order to participate successfully in classroom lessons. He postulated that classroom lessons are constructed from three part instructional sequences: the teacher initiates, a child responds and the teacher evaluates the response. There are various types of initiations, each requiring a different form of response. For example, some initiations are "invitations to bid," and require children to raise their hands, while other initiations are "invitations to reply" and require children to call out an answer. These performance rules regulate social interactions by specifying how lesson tasks get accomplished. In order to be considered competent classroom participants, children must learn to differentiate these types of initiations and respond appropriately.

It is important to emphasize that these "rules" are essentially *cultural conventions* which specify appropriate forms of interaction, much like rules of etiquette. According to classroom etiquette, children must not only give the "right" answer, but they must also raise

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their hand, wait to be called on, put the answer in full sentence, and so on. Academic knowledge that is not expressed according to these classroom rules is often negatively sanctioned. That is to say, as both Jackson and Mehan have noted, children who do not follow these classroom rules will be evaluated negatively by their teachers even if they know the academic content.

Along similar lines, Leiter (1974) has argued that the social basis of evaluation is especially important in the lower grades. His research has shown that kindergarten teachers label their students as particular social types, such as immature or insecure, and then use these labels to judge academic performance. These labels may have long lasting effects, because teachers may use them in deciding children's first grade placements.

Thus it appears that academic success in school may depend heavily on children learning appropriate classroom behaviors. Yet little is known about how children learn the rules and regulations underlying classroom interaction, or how knowledge of these rules is related in any systematic way to teachers' evaluations. In the research reported here, an attempt was made to specify which rules children acquire upon entering school and the relationship between knowledge of these rules and teachers' judgments of academic competence.

Method

Thirty kindergarten children were interviewed four times during the first three months of school, on the second day and during the second, fourth and tenth week of class. The children ranged in age from 4.9 to 5.6 at the beginning of the school year (mean age = 5.1). Two verbal measures were used to assess the children's developing knowledge, a standardized interview and a story task, and the teachers were asked to judge the students' performance. We hoped that findings based on verbal measures would complement previous observational findings and contribute new insight about children's developing knowledge of classroom rules.

Children participated in the standardized interview at all four time intervals. They were asked open-ended questions about the rules of the classroom, such as "What makes the teacher happy? Sad? Angry?" and "Are there some things in school that you have to do? that you're not allowed to do?" Children were encouraged to continue talking with non-directive probes, such as "Anything else?", and more indirect questions, such as "Can you tell me anything else about school?"

The children's responses to the interview questions were categorized as either behavior rules or performance rules. Behavior rules were of two types: 1) restrictive rules, which were mainly physical restraints such as no running and no screaming, and 2) prescriptive rules, which specified necessary behaviors such as paying attention, following routines and cleaning up. Performance rules were of three types: 1) specific academic tasks which had to be performed, such as reading and handwriting, 2) turn-taking procedures such as raising their hands, or 3) a reference to the teacher's evaluation of work such as "and the teacher gives you a star."

In the story task, which was given only during the second week and the tenth week, children were read short story vignettes describing the behavior and performance of two characters in school, and after each story, the child was asked if the character did anything wrong, and if so, what was wrong? Fifteen children participated in the story task during the second week and the remaining fifteen children participated during the tenth week. The stories focused on six rules, three behavior rules and three performance rules taken from Jackson's and Mehan's analyses. The behavior rules were leaving the room without permission, sitting quietly and paying attention ; the performance rules were initiation of topic, turn-taking procedures and evaluation of a response. For example, one of the story vignettes for "sitting quietly" was:

> One day, Billy finished his arithmetic before all the other kids. So he started banging his pencil on the table and talking to the kids sitting next to him. Did he do anything wrong?"

A story vignette for "initiation of topic" was:

> The other day, the teacher called the children together for a meeting. When everyone was sitting down, Sally said, "Ok, today let's talk about animals." Did she do anything wrong?

Children's responses to each of the story vignettes were scored as 0 if the child indicated the character did nothing wrong, 1 if the child indicated the character did something wrong but gave no reason or the wrong reason, 2 if the child simply repeated part of the story as an explanation, or 3 if the child gave the underlying rule which was violated.

After the last student interview, the kindergarten teachers evaluated their students on twelve dimensions along a scale of 1 to 5. These dimensions were adapted from previous investigations (e.g., Pedulla, Airasion & Madaus, 1980) and included motivation, disruptive classroom behavior, ability to work with limited supervision, performance on school tasks and academic ability.

Results

The Standardized Interview

The children's responses were categorized as described above. The number of responses in each category at each interview time is shown in Table 1. Children were easily able to verbalize behavior rules as well as provide several behavior rules during all four interviews. The pattern of responses for the performance rules, however, was quite different from the behavior rules. Although children mentioned many academic tasks, they tended not to make reference to either turn-taking procedures or to the evaluative nature of the classroom.

That the behavior rules were learned quickly and easily by all children is not surprising. These rules tend to be taught explicitly. Teachers announce both restrictive and prescriptive rules from the beginning of the school year and continue to correct behavior violations. Performance rules, in contrast, seem to be taught more implicitly; they often have to be inferred from ongoing classroom interactions, and this may be why these rules are so difficult for children to learn.

The Story Task

The results of the story task corroborate the interview data. The proportion of use of each response level

Table 1
Number of responses to the rules and regulations questions in each category for each interview time.

Category	*Interview Time*			
	Day 2	*Week 2*	*Week 4*	*Week 10*
	Behavior Rules			
Restrictive Rules				
Physical Constraints	41	39	54	65
Leave Room	3	5	6	10
Prescriptive Rules				
Attention	6	15	4	7
Routines	22	20	23	39
Housekeeping	10	9	15	11
General	10	9	11	18
	Performance Rules			
Academic Tasks	40	35	25	47
Turn Taking	1	3	7	7
Evaluation	12	4	9	3

Table 2
Mean proportion of responses at each response level be rule type for the story task at each interview time.

Response Level	*Interview Time*	
	Week 2	*Week 10*
	Behavior Rules	
0	.18	.16
1	.09	.11
2	.31	.23
3	.42	.50
	Performance Rules	
0	.41	.42
1	.09	.11
2	.06	.04
3	.44	.42

Table 3
Spearman rank order correlations between measures at Week 10.

	Restrictive Rules	*Prescriptive Rules*	*Performance Rules*	*Story Task Behavior Rules*	*Teacher Performance Rules*	*Evaluations*
Restrictive Rules	1.00					
Prescriptive Rules	-.49**	1.00				
Performance Rules	-.32**	-.51**	1.00			
Story Task Behavior Rules	.58**	-.27	.05	1.00		
Story Task Performance Rules	.65**	-.53**	.15	.79**	1.00	
Teacher Evaluations	.12	-.25	.33*	.75**	.72**	1.00

*$p < .05$

**$p < .01$

was calculated for each child for the behavior rules and the performance rules independently (see Table 3). The mean proportions were entered into a 2(rule type) by 2(interview time) by 4(response level) analysis of variance. A significant interaction between response level and rule type, $F(3,84) = 17.01$, $p < .001$, indicates that the children responded at a higher level for the behavior rules than for the performance rules. Children could easily correct a behavior rule violation even at the second week of school, but continued to have difficulty correcting a performance rule violation at the tenth week.

Thus, both the interview data and the story task data indicate that children know the rules governing behavior in the classroom from early on, but the rules governing performance, or the expression of academic knowledge are not learned as easily. The next question is how knowledge of these different types of rules relates to the teachers' evaluations.

Teachers' Evaluations

In order to determine the relationship between the measures, Spearman rank-order correlations were computed between children's responses on the interview and the story task at the tenth week and the teachers' evaluations. For the interview data, children were ranked separately by the proportion of restrictive behavior rules, prescriptive behavior rules and performance rules given in the interview; for the story task, children were ranked by their mean response level for the behavior rules stories and the performance rules stories separately. The teachers' evaluations on each of the 12 dimensions for each child were added and then ranked. The resulting correlations are shown in Table 2.

Children who displayed better knowledge of the performance rules, both in the interview and on the story task, were judged to be better students by their teachers. Furthermore, knowledge of the behavior rules and knowledge of the performance rules were negatively related. That is, children who gave behavior rules tended to give only behavior rules and children who gave performance rules tended to give only performance rules. This suggests that behavior rules and performance rules are separate categories of knowledge. They are learned independently, and may differentially affect how children are evaluated. Although teachers' evaluations were clearly and consistently related to knowledge of the performance rules, they were inconsistently related to knowledge of the behavior rules.

In order to explore the developmental pattern of these relationships, Spearman rank-order correlations were computed between children's responses to the interview and the story task during the second week. The pattern of relations were essentially the same. Again, behavior rules and performance rules are negatively related for the interview. The correlation between restrictive behavior rules and performance rules was -.58, $p < .01$; the correlation between prescriptive behavior rules and performance rules was -.71, $p < .01$. These results support the interpretation that behavior rules and performance rules are learned independently. Correlations were then computed between children's responses at the second week and teachers' evaluations at the tenth week. Children who evidenced better knowledge of the performance rules during the second week were judged to be better students at the tenth week ($r = .38$, $p < .05$), but there was no significant positive relationship between children's knowledge of the behavior rules and teachers' evaluations. Thus the relationship between children's developing knowledge of the performance rules and teachers' evaluations is straightforward. Children who quickly learn performance rules are judged to be better students. Teachers are not simply evaluating "obedient" students as better students. Their evaluations are related more to the ways in which children have learned to express their knowledge.

Conclusion

These results extend our understanding of the classroom environment in several ways. First, previous classroom research, which relied mainly on observations, revealed the complex set of rules and regulations underlying classroom interaction. In this study, we obtained more direct evidence of what rules children learn upon entering school. Both the open-ended interview and the more constrained story task suggest that behavior rules and performance rules form separate categories of knowledge. They seem to be learned independently and knowledge of these different rules systems is differentially related to teachers' evaluations. Behavior rules are taught openly and explicitly and all children seem to learn them quickly. Further, there does not seem to be any systematic relation between knowledge of this type of rule and teachers' evaluations.

Performance rules, on the other hand, are more implicit. They emerge from the social structure of the classroom and must be gleaned from ongoing interactions. For example, the teacher never tells children that she alone is allowed to initiate a topic. Rather, she structures the situation in such a way that she is always the one to announce the topic. If a child tries to change topics, the teacher would most likely say something like, "Yes, but right now we are talking about x." This type of tactic is similar to indirect directives (as discussed by Ervin-Tripp, 1976), such as "It sure is cold in here" for "Shut the window." The underlying meaning of the teacher's statement (i.e., "You are not allowed to initiate or change topics") is dependent on the social structure of the classroom. A child who does not understand the underlying social structure may not understand this statement.

The strong and consistent relationship found between children's knowledge of performance rules and teachers' positive evaluations suggests the importance of knowing these rules. This finding indicates that, even at the kindergarten level, teachers are not simply evaluating their students on the basis of *what* they know, but also on *how* they have learned to express their knowledge.

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Paradigms and Prejudice

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The Laboratory of Comparative Human Cognition has always treated research training (supported by a combination of federal and private funds) as a central part of its activities. A constant theme of our research has been the need to bring diverse populations and diverse points of view to bear on the ways in which culturally organized experience shapes the development of human nature. As constant as our basic theme has been the difficulty of convincing the scientific community that highly trained professionals representing the widest possible variety of experiential backgrounds is a scientific necessity in this era of very rapid social and technological change.

In this note we want to address the problem of research and training as they are influenced by the process of funding research grants. We focus on a specific example, brought to our attention by Anna Fay Vaughn-Cooke, a former fellow of LCHC. The particulars of this case are in no way exceptional. But it is timely and exceptionally clear for what it reveals about the ways in which dominant scientific paradigms maintain themselves and the unhealthy convergence between scientific paradigms and patterns of social inequality.

Our discussion is organized in several stages. First, we review the background to Dr. Vaughn-Cooke's research. We then summarize the nature of the objections and support provided by reviewers. We characterize the reviewers' comments in terms of the basic scientific paradigms (linguistic, experimental, quantitative) that are brought to bear in the evaluations. Then we point out an assumption that comes as free baggage with these paradigmatic arguments -- the assumption of normativity applied to one ethnic/socio-economic group.

The critiques summarized, we address the problem of institutionally acceptable response. Two categories for questioning the review decision are provided by the granting agency, "prejudice" and "bias." We analyze the way in which these bureaucratic categories translate back into scientific argument, outlining the restricted means available to researchers who would pursue either route.

To quote a long term econometric friend of LCHC, "In variability there is hope." It is our intention here to stimulate discussion of ways to increase the variability of the voices that can whisper to us about human nature.

The Particular Case

Anna Fay Vaughn-Cooke, and her colleague, Ida Stockman, have asked for reconsideration of a decision by the National Science Foundation (NSF) to refrain from funding a proposal they submitted in the spring of 1983. They have sent copies of their response to the evaluations on which the decision was based along with copies of those evaluations to people throughout the country who are interested in their work.[1] The NSF people to contact for more information are the Acting Assistant Director whose office handles reconsideration requests and the Director of the Linguistics Program, whose office processed the proposal.

The Proposed Research

The work is a study of children's language acquisition, in particular of locatives. It is basic research, purporting to generalize interest. It describes how children acquire a basic aspect of language competency. Vaughn-Cooke and Stockman identify eight particular locative subtypes of interest, some dynamic (e.g., "They are going away," or "Put it on the table."), and some static (e.g., "They are away," or "It is on the table."). The Investigators are moving beyond the current state of the work which stresses most the acquisition of individual locative words (e.g., "away" or "on"); they designed the project to study" . . . the complex set of factors which affect the use of these words in coding dynamic and static location concepts," and their goal is "to contribute to a more comprehensive account of this area of semantic development." They point to the importance of having this information available for applied fields that deal with language development. They focus on three specific hypotheses and provide a complex system for describing child utterances that will enable the hypotheses to be examined systematically, and justify this system.

Vaughn-Cooke and Stockman did not have to collect new data. They possessed a video-taped data base of the locative utterances of twelve boys and girls, the sample for each child spanning 18 months. The children ranged in age from a year and a half to six years. All of the children are from working-class Black homes and communities as are the researchers.

There is a deeper background, part of it residing in the biography of the Principal Investigator who was the LCHC fellow. Vaughn-Cooke was a speech therapist who experienced and understood the weakness of the diagnostic and remedial machinery available for dealing with Black children. She entered a new field, receiving a Ph.D. from Georgetown University in sociolinguistics, a field which had a theoretical and practical interest in

[1]Readers interested in receiving a copy of the proposal, reviews or responses contact the Principal Investigators directly: Fay Vaughn-Cooke and Ida Stockman, University of the District of Columbia, Mount Vernon Square Campus, 724 Ninth Street, N.W., Department of Communication Sciences, Room 401, Washington, D.C. 20001.

concerns like those that Vaughn-Cooke expressed. Her dissertation took full advantage of the training provided at Georgetown for quantitative methods useful to study language with respect to its synchronic variation and change in progress. She documented age-graded evidence for lexical change in Southern Black English, going beyond the more common sociolinguistic emphasis on phonetic differences and showing a relationship between phonological change and changes in derivational morphology. While the motivation for her graduate work was practical, her control of the field was extensive and deep and her dissertation reflects her interest in, and ability to handle, theoretical issues of importance to linguistics.

Vaughn-Cooke began her new career in a department which provided an opportunity for her to train students in both of her fields. She taught basic linguistics and sociolinguistics as well as speech therapy diagnosis and remediation. She developed alternative instruments and methods that have proven helpful in dealing with language problems of children from Black homes and communities.

However, there was a major stumbling block to a fully satisfactory approach to the problem -- lack of basic research. It is difficult to diagnose and remediate problematic speech development without an adequate research base of ordinary non-problematic development. The gap in the research was two-fold: 1) the available work was, by and large, limited to studies of children from White middle-class homes in collegiate communities and therefore of unknown character with respect to generalizability to other children; and 2) much of the available work omitted interesting, more complex, interactions that would justify empirical and theoretical links between the studies of language development on the one hand and the concrete circumstances in which children acquired language and displayed their normative or problematic progress toward full functioning in their native languages on the other hand.

Subsequently, now working with Stockman, Vaughn-Cooke created a research program for addressing these problems. Developing the grounding needed in the methods and theories of child language studies, they received funding from the National Institute of Education (NIE) to collect and analyze an extensive corpus. They videotaped children in various settings and chronicled individual development. Because of the age stratification in their sample, they have a good base for considering all of the pre-school years. They began processing their data; indexing the tapes identifying certain segments to be transcribed in the linguistically appropriate, but complex and time consuming way, and beginning analysis of some developing structures. For the first time, there is some evidence and some argument available to address the question of those factors in language development studies in English that appear to be general and those that appear to be specifically related to class and ethnicity. The NIE grant was a provisional multi-year grant; their application for continuation was viewed as almost pro-forma. They had made good progress and their initial work had been presented and praised in various forums. However, NIE was changing in response to the economy and the new administration. Just about as soon as they had completed the longitudinal data collection, they were without funds to continue the data processing and analysis.

Funding from other sources was sought. The proposal to NSF was a specifically designed and specifically written document that would support new analysis to continue the research program. The locative study described above was the result.

The Reviews. Five reviews of the proposal are available. An excellent rating was provided by one reviewer, noting that the proposal was tightly written and the design exemplary, the literature well searched and handled with insight. This reviewer notes that the proposal "plugs a hole" in the field, that while the researchers come out of a different tradition, they are "well within the purview of linguistics," and that their work on language development is well supported by their post- doctoral and institutional experiences, including the organization sponsoring the proposal (The Center for Applied Linguistics). A second reviewer rates the proposal very good, pointing to the importance of the Investigators' effort to go beyond the study of individual locative words and the value of the longitudinal data base. Like the first, this reviewer points to "the paucity of research in this particular area" and sees the "research activity of the applicants" as positive.

Now for the bad news. Two reviewers rated the proposal as fair and one rated it as poor. Vaughn-Cooke and Stockman's response concentrates on these reviews.

The Response to the Evaluation

Vaughn-Cooke and Stockman prepared and submitted a 10 and 1/2 page response, with 2 pages of references, focusing on the two "fair" ratings and the "poor" rating. In lieu of any quantitative evidence from the agency, they examined the reviewers comments for evidence of judgments that are procedurally unfair. They conclude that two reviews "reflect evidence of a deliberate attempt to build a case against our research" because it was conducted with Black children. The other "fair" rating, they conclude, contains unfounded criticisms that should be rejected.

We concur with their statement in the covering letter that the most disturbing aspect of the whole event is the treatment given to studies focusing on Black children subjects. The nature of the reviews and the applicants' responses strike us as yet another indicator of a common, underlying, source of confusion arising from the politics of representation as they are discussed in an earlier issue of this *Newsletter* (see Cole, 1983).

Paradigms Give No Quarter

One evaluation, with a fair rating, begins positively, "The proposed research addresses an important topic in a creative and provocative manner." The Investigators, in their response, note that the reviewer argues for one small adjustment in their descriptive schema which their analytic procedures are fully capable of accommodating and which they propose to test out.

However, they point out that the reviewer's major criticisms suggest a lack of familiarity with the proposal. First, the evaluation suggests that there are "certain deficiencies of concept and method," but the response shows that in one case, the task the reviewer argued couldn't be done, was not even proposed, and in other

cases, that the concept or method the reviewer was looking for was clearly stated on particular pages of the original proposal.

From our reading of the reviewers' comments, it appears that they can best be understood as reflecting what might be termed as paradigm prejudice. In a section of the evaluation called, "*Undue demands on resources,*" the reviewer begins, "My final concern is methodological." This turns out not to be quite the non-sequitur that it at first appears, if the reader assumes that the writer is building a case against the proposed research on the basis of a bias, and that the reviewer has prejudged the pertinent issues.

The writer continues, "The appeal of naturalistic data is undeniable, particularly given the ethnographic Zeitgeist. The budget and time line for this project, however, make the costs of this method quite clear: . . . I am not convinced that the putative advantages of this method warrant this expense." The review ends with a suggestion that the data bank is suitable for "general grammatical or discourse schemas [rather] than for the study of a single semantic field."

The reviewer claims that "structured comprehension or expression tasks" are "apparently valid and useful" and "more economical." There is no argumentation, evidence or literature citation offered to back up this claim, although the readership of this *Newsletter* might certainly find it tendentious and wonder if anyone would ever be allowed to question the "apparent" validity and usefulness if this bias prevails. In fact, little attention has been paid to the important issue of what sorts of language structures are best studied with what sorts of data collection methodology.

Most important from our point of view is that the reviewer goes to great lengths to justify claims about small details of the descriptive system (some relevant, some not), but evidently cannot treat the matter of economy/method/Zeitgeist/data with care. Given our own research backgrounds and our understanding of the current research scene, we cannot understand the ease with which phrases such as "naturalistic data" and "ethnographic Zeitgeist" are related to some particular "this method." The descriptive and analytic procedures that Vaughn- Cooke and Stockman propose are the only "this method" referents we could imagine being pertinent. They are in no way the product of a "homogenous" paradigm of a fictional investigator who undertakes naturalistic data investigations or who participates in an ethnographic Zeitgeist. Only a woeful lack of understanding of the history, breadth and complexities of the work of scientists could produce such a reduction of relevant issues. Those of us whose research paradigm encourages us to read and reflect on the relevant literature are amazed at the diversity in the world outside of quasiexperimental methods (and even within it) and we see no homogeneity of method. The data may have been collected in a way that could fit some definitions of naturalistic, but the agency is not being asked to pay for that; that work was already done. What but paradigm prejudice would lead a reviewer to advise the agency not to pay for something that had already been paid for in the first place?

Another negative reviewer, providing a "poor" rating, reveals a similar tie between paradigm differences and economic resources. The evaluation calls for analysis "using appropriate inferential statistics." Following that, the reviewer worries that the Investigators will not be working enough to merit their salaries.

The reviewer's inability to imagine what the work entails in terms of time and effort, however, seems to arise from a limited understanding of the proper quantitative approach to the data. The data analysis that a linguist or a sociolinguist has to do is quite extensive and requires workers with extensive education. You cannot rely on naive transcribers or coders with a few weeks training, whose inter-coder reliability you then check.

Typically, in work of the type proposed by Vaughn-Cooke and Stockman, when you have progressed to the point in your description of the data that you have any numbers to do statistics on there is no point in doing the statistics because of the prior analytic work. If there are differences to be found, they will be overwhelming. Language is like that. As a conventional communicative system it has to have very staid, very obvious properties -- it's not very numerically subtle. Statistical approaches to the sort of data that the proposal is concerned with are cogently discussed within it, and the reviewer provides no argumentation, evidence or literature review to indicate that they are insufficient and that the inferential statistical procedures that are suggested in the review are necessary in addition or are superior as an alternate.

It appears that the reviewer does not know how much work the proposal entails, *assumes* none, and then concludes that the Investigators will be taking a salary illegitimately. There is quite a bit of work involved in handling the language data -- which tends to be very subtle in every other way than numerical. The estimate the reviewer makes about the small amount of work to be done makes sense only in the light of paradigm bias about the work proposed.

We don't think it is coincidental that the reviewers who appeared to be outside of the paradigm also made a major issue of spending the agency's money. Consider that one review is arguing for a quasi-experimental paradigm, another for a less well-specified but apparently big N design, and that the proposal is arguing for yet a third approach. To make theoretical headway, supporters of all these approaches should support scholars, attract and provide for new adherents. But there are limited resources. If the "other guys" get resources, your view gets less. We do not believe that reviewers try to limit the resources awarded to approaches that they disagree with; we believe that they simply cannot understand them and hence reach a judgment that they are not worth an expenditure of the limited resources. Readers, including reviewers, bring their understandings to the text; they cannot bring what they do not have and they cannot help but bring what they do have. The motivated misunderstandings are not a product of willfulness, but rather of inadequate enculturation in the *diverse* scientific tradition within which one is working.

Subjects From Minority Communities in Basic Research

The assumption of normativity for a particular approach to collecting and analyzing data is often accompanied by an assumption of the normativity of a certain sort of subject. We are familiar with this

difficulty as individuals and as a group.

Several years ago, we invited scholars from various parts of the country to participate in a small, relatively informal, conference about development. Several of us were dismayed at one event. A member of our laboratory, Black and not very young looking, who had conducted quite a bit of research, asked one of our invited colleagues about why there was a special point made that the population of the subjects was restricted to white middle-class children and, why the restriction had been made in the first place.

The dismay came with the answer. Responding as if to a newcomer in psychological research asking an irrelevant question in a large lecture hall, the researcher said that all basic research must be done first on a normative sample and then later ethnic and racially different children could be studied, with their difference from the mean entered as variables to be considered. In the discussion that followed this lecture, we established that there was no theory or evidence suggesting that the basic research problem being considered specified white middle-class children as normative and others as inappropriate to study. We pointed out that epiphonema could mask the results because of an unnecessary restriction on the sample and that it was strange that such a criticism would never arise when the restriction was of this type. We also pointed out that the research tradition that supported that sort of bias as at least normal and argued for it as somehow necessary had a bad history, leaving unstudied much of the detail of the ordinary development of children where cultural, linguistic, and economic differences might in fact matter. We also discussed how research of that sort could lead to strange conclusions about children who are not white and middle-class being sub-normal.

It did not do much good. In the end, the researcher who presented the findings said it just didn't matter enough to spend any time on. In the discussion, from both sides in the debate, the preference for publishing and funding was laid out: study white middle-class children as normative or don't get funded and published . . . and then you don't get tenure. If you study minorities, study them as minorities. Have a control group of "normals" or evidence from "normals" in the literature for comparison; or else don't do basic research, study the problems the minority subjects have such that they deviate from the "norm." This logic doesn't even rise to separate but equal; it's outright second-class citizenship!

We are not totally surprised, then, to find that two reviewers of the Vaughn-Cooke and Stockman proposal acted strangely about her choice of subjects. Three thought it was alright (that's progress), one citing agreement with the argument they put forth about the nonrelationship of children's race, culture, class or dialect to the basic research issue being addressed.

The other two, however, are just the expectable results of the scientific tradition that the guest at our conference defended. One apparently shares the unfortunate notion that one group is more normative than another. While we cannot say whether or not this reviewer would have required a justification if Vaughn-Cooke and Stockman had worked with a white-middle class sample, we doubt it.

The other reviewer who objected to the study focusing on Black children is in a worse position. This reviewer is worried about "levels" and talks about a major controversy currently existing and implies that the Black English speakers may be at a lower level. Using this line of thinking, people could come to the strange conclusion that children not ordinarily represented in the "normative" samples for basic research were in fact "sub-normal." It is difficult to understand this claim since the reviewer contrasts three entities: Standard English, Black English and some mediating device which measures levels, evidently, called English. The reviewer questions " . . . whether children who speak Black English acquire and use English at the same level as Standard English speakers." Although the reviewer claims that the vita of the Principal Investigators "indicate that they are aware of this controversy," it is hard to imagine what literature is being referred to. Scholars who use the terms Black English and Standard English never propose that there is an entity that can function like a thermometer and exist independent of the other two. The work referenced in the proposal and the work mentioned in the vita certainly do not suggest any such approach. Vaughn-Cooke and Stockman are responsible for some of the evidence and argumentation about where there are points of similarity and difference between the acquisition of the two dialects of English, Standard and Black. Their work and that of other scholars substantiate their claim that dialect differences are not relevant to the basic research issue. In their response they point to the long known fact that the differences between Black and Standard English are documented to exist in certain areas of syntax and phonology, certainly *not in the development of the semantics of locative expressions.* All in all, if the reviewer were not a victim of the research tradition and had access to the literature he or she could be freed from worries about levels and "sub-normals." As we could predict, the reviewer calls for a control sample, although there is no overt reference to such a group as normal.

What to Do?

If two Black women living and working in a city where children who aren't Black are pretty hard to find can't use a nicely developed data base to do basic language development research because the children in their sample are Black, what are they supposed to do? Get out of basic research? Join the other Black scholars who have a "low incidence" of applying to Federal Agencies like the NSF? Go along with the state of affairs that says that children in their community are not to be in normative samples? Go along with an idea that children who are members of the community they are members of, children like they were and like their children are, are interesting to study only as problems, as potential deviations from the norm? To join the bias? How can they contribute to basic research, and why should they when it reveals prejudice about their identity? And, if they don't contribute, how does the bias in the research tradition adversely effect the state of our knowledge on basic research? It's not just that two women don't get to do a study or even that they don't get to do any basic research; it is that we have removed from our view any way to find out if or how that barrier has restricted our scientific progress quite systematically ever since the beginning of American scientific research.

Reconsidering the Procedures

We called the agency to find out more about the procedure. First we learned that it is a reconsideration request rather than an appeal and that the reconsideration procedure has been in effect for 5 or 6 years. The linguistics program handles between 125 and 150 proposals a year and only about 1 a year is the subject of a request for reconsideration. Each is treated individually and the sample is small, so no odds can be calculated for the success of a reconsideration request; however, there have been no changes in the decisions rendered in the Linguistics Program.

The ground rules for requesting reconsideration are such that merely disagreeing with the outcome is not sufficient; one must base the request on more procedural grounds. The response to an evaluation should make the case that there has not been a fair review; that there has been bias, or that there has been prejudice against a point of view.

We then asked about the availability of evidence for *de facto* bias or prejudice, asking specifically what information was available about the characterization of the range of grant proposals that were successful. There is no such general information available. If a specific question is raised, then a review is undertaken. We were told that, for example, a question was raised about grant proposals submitted by new investigators and one was raised about proposals submitted from small colleges. In both cases the result was that the agency was doing okay; there was no difference in the success ratio of proposals from such sources in comparison to the overall success ratio. The agency person that we spoke with did not know of a similar review of the case of investigators from minority backgrounds. (N.B. The Principal Investigators are known to the reviewers by their name, vita and institutional affiliation, at least. The reviewers identities are kept anonymous.)

We are interested in the *de facto* evidence about minority principal investigators, but somewhat differently. We would like to know, for instance, about the incidence of success for proposals where minority researchers have attempted to study ordinary, non-problematic development of children from their own communities in order to contribute to the knowledge of ordinary non-problematic development. The agency person to whom we spoke said that he had the impression that there was a low incidence of proposals submitted from Black investigators in the Linguistics Program, at least. We are not sure, then, that a success ratio approach would yield any information of interest, particularly if we raised a question that asked for information on the *de facto* handling of proposals on certain kinds of topics.

In response to our question about whether a third party, like us, could raise a question to get *de facto* information, or if the Investigators or sponsoring institution had to do that, we found that we had the wrong idea on the procedure. A question, like the one about new investigators or small colleges, is raised in the congressional hearing process. Presumably, ordinary citizens like us have access to that information by using a congressional intermediary or by exercising the rights afforded under legislation like the Freedom of Information Act.

In lieu of any quantitative *de facto* evidence, the reconsideration request must be based on issues like the paradigm prejudice and assumptions of normativity that we discuss above. We believe that pre-judging on the basis of good training in a different research tradition and assuming a stance about normativity that the tradition promotes, add up to a bias evidenced in the reviews for this particular proposal. It is very difficult to imagine, however, what would constitute proof positive that would convince people from a variety of research and policy traditions. It is even more difficult to imagine what the funding agency could do to guard against the effect of such bias as they allocate ever-dwindling resources.

What is the Decision Making Process? Concern about how to prove something and what to do about the problem, led us to reconsider the whole process. What sort of events are proposing and reviewing?

On the one hand, the notion of "peer review" and the question of whether reviewers are "making a case against" a proposal suggest something like a courtroom. On the other hand, the provision of advice and relevant references by reviewers and the academic affiliations of so many participants suggest something like teaching or testing is going on.

In the present case, good reviews are short and negative ones are long. There may not be a completely consistent relationship between the number of pages and the sort of rating provided, but as we reflect on our experience, we suspect as reviewers and as proposers we've experienced and accomplished this relationship more often than not. Another asymmetry is in who is anonymous and who is known -- the reviewer versus the proposer. Both of these contrasts promote the school-like interpretation. An answer that is seen as wrong by the teacher often promotes a greater amount of response from the teacher than a correct one, including a great deal of effort to replace the "incorrect" with a more adequate answer. In testing, each test-taker has to provide a name or some form of identification, and the test-maker remains as anonymous as possible.

The courtroom interpretation is hard to sustain. Peers are usually found on juries, while third and fourth parties present the prosecution and the defense. But in the "peer review" process, the proposer plays the role of both the defendant and the defense counsel, while the reviewers are only in evidence as they become prosecutors or as they join the defense team. Some reviewers, like jurors, have the benefit of face-to-face communication with their fellows. The face-to-face or "panel" review has the additional responsibility of recommending the "sentence" but the agency has a responsibility in this regard, too. And, most important for the American notion of jurisprudence, the accused (the proposer) never gets to face the accusers. The reconsideration process is mediated.

How are we supposed to deal with this? Would defining what different people think they are doing when they participate in such things as proposing and reviewing help us to identify our goal and come closer to approximating it? Sometimes, reading a review one feels privileged to be able to listen in while the writer goes on and on, almost talking to himself and figuring out a knotty problem. The reader likes to trace the problem-solving and get the specific content and maybe

thinks about using the experience as a model for future activities, or hopes that it will come out in an article that can be properly cited. Other times, the reader gets impatient with the reviewer's self indulgence, assumes that the reviewer is just showing off or that such improbable arguments or weak evidence would never be presented in a more public forum where the reviewer would be more fully accountable.

If the process is more educational than court-like, it should consider the three-part structure found in instructional/educational exchanges. Why is it a two part process? Why not have the reviewer suggest or question or criticize and have the proposer respond and then have a decision. Occasionally, large requests go through such a process, "the best and final offer." Some variation on the current procedure might both help us to figure out what it is and might even increase the teaching function - both teaching the reviewers and teaching the proposers.

Conclusion

Our conclusion is simple: the problem with funding and with this particular event is a part of our general problem of how to do science and how to insure that diversity survives in a central enough way that change will represent progress.

We need to know what the propose-review-decide-reconsider process is and what procedures could be experimented with to render it more successful. No one is interested in reducing the amount of cross-talk among scholars working in different research traditions; nor is anyone interested in being insulated from criticism. The current process has some advantages and, we believe, some deep difficulties. The beneficiaries of the funding and of the scholarship that the funding promotes should attend to the problem. We appreciate your thoughtful consideration of these issues of intellectual and practical importance. We invite constructive comment.

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"Correct understanding of reality is impossible without a certain element of representation, without a stepping-back from reality, from those direct, concrete, unitary impressions by which reality is represented in the elementary acts of our cognition."

L.S. Vygotsky (p. 453)

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Despite criticism by those who study language in social interaction, most linguists are still very skeptical of the use of conversational data for linguistic analysis and prefer to engage in abstract speculation about the acceptability of utterances "out of context." Most importantly, many linguists still think of an "error" as something accidental, which happens because of memory limitations or difficulties in encoding information in real life situations. If *forced* to use a transcript of natural conversation, many linguists would tend to discard apparent errors, interruptions, false starts, and pauses.

Given these assumptions, it is not surprising that very little research has been done, within linguistics, on natural speech. The same assumptions, however, are not shared by those sociologists who, inspired by the work of the late Harvey Sacks, have been interested in the study of conversation. The work of conversation analysts breaks with many conventional ways of looking at speech and points to systematic aspects of language use that cannot be ignored by those researchers who are interested in verbal communication.

In this tradition, Goodwin's book makes some important statements on the organization and management of "errors" in conversation. Based on 55 hours of audio-visual recording of natural conversational interaction, this monograph offers a detailed discussion of the ways in which some "errors" are socially constructed as important elements of verbal interaction. To understand this, we must first realize the importance for a speaker not only to produce intelligible utterances, but also to have an audience. According to Goodwin's analysis, repair mechanisms are used by conversationalists to attract the attention of a particular hearer or to shape the current utterance in such a way that it could be made relevant and understandable for a new recipient (if the originally chosen one is not attending to the talk). Some of these "repair mechanisms" are in fact "errors," restarts, interruptions in the middle of a word, or pauses in the middle of an utterance. By using transcripts of conversational interaction which include information on participants' eye-gaze, Goodwin is able to show that "recipients have the ability to attend to restarts with precision, and that speakers in fact expect recipients to do this and systematically organize their

talk with reference to such an ability by, for example, not only repeating the phrasal break, but also treating the recipient's failure to move after the initial phrasal break as the noticeable absence of relevant action." (p. 64)

Goodwin's work is also important for those who are interested in speech act theory. His discussion of a short sequence during a conversation in which three participants are teaching a fourth one how to play bridge makes a strong argument in favor of multifunctionality of single propositions. Goodwin shows that the illocutionary force of an utterance as projected by the speaker's words and intonation can change in the course of the utterance itself. Thus, an original offer of information to someone who does not know the rules of bridge is changed into a request for verification for someone who instead knows how to play. More importantly, the same sequence also shows that while reorienting her utterance to make it suitable for a new recipient, the speaker is also able to maintain the relevance of her talk for the original addressee:

"It is thus inadequate to talk simply of this utterance as having an addressee; . . . [it] provides for the participation, not just of multiple recipients, but of recipients who differ from each other significantly in ways relevant to the talk in progress." (p. 152)

This monograph is clear and well written. The long introduction (pp. 1-54) provides an interesting synopsis of prior studies of natural speech, in addition to a useful discussion of the transcription conventions. These and other features make Goodwin's book inviting for those who are not familiar with conversation analysis as well as for the old fans.

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Barnhardt, Carol. "*Let your fingers do the talking:" Computer communication in an Alaskan rural school.* Report of a case study for the National Institute of Education (Contract NIE-P-82-0082).

During the school year 1982-83, members of the Laboratory of Comparative Human Cognition together with members of the Center for Cross-Cultural Studies at the University of Alaska coordinated an unusual experiment in cross-cultural communication. Students in schools in San Diego County used microcomputers to compose, edit, send and receive messages from students in other schools, including five schools in Alaska. This project, which ran under the banner of "The Computer Chronicles Network," has been described in these pages previously from the point of view of San Diego (Riel, 1983). In this report, Barnhardt describes the impact of the experiment from a very different point of view. One of the Alaskan Computer Chronicles sites was Wainwright, a village of about 400 Inupiaq Eskimo people on the Arctic Ocean, about 300 miles north of the Arctic Circle. Barnhardt starts the report by highlighting the contrasts and contradictions inherent in a setting that integrates high technology tools into an age-old hunting and fishing culture. The relevance of this experiment is raised early in the paper: ". . . computers provide the potential for an interface between the old and the new."

Barnhardt then profiles the impact of the computer communications network on four teachers and the principal of a school in Wainwright. These teachers' interest in computers spanned the spectrum from "computer enthusiast" to "mildly interested." The impact of such networks on rural education is also examined in the context of Wainwright.

Barnhardt argues that "Computer communication is indeed a powerful tool, BUT it can be powerfully good or powerfully bad." Issues of the reactions of teachers and administrators to change, challenges to existing power relations, and the necessity for changes in people's concepts of schools, teaching and learning all were found to be constraints on the use of this new instructional medium. Although she points to the potential for an "accumulation of power at the central level," Barnhart concludes that computers "can and will continue to be, a useful tool for decentralization." The report closes with a challenge: "We are at a crossroad in the process of developing educational networks, and we need to be certain that the networks we develop will help to enrich and diversify the schooling process rather than limit and control it."

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This book examines the cultural experience of black children and discusses its effects on thinking, learning and school performance. Hale's book contains what is perhaps the most comprehensive review of material related to the intellectual development and academic achievement of black children since Silverstein and Krate's work (1975). Silverstein and Krate argued that the academic and intellectual performance of black children is influenced by their social and cultural circumstances. Hale's book supports this position, but takes a different view about the nature of black culture and its implications for cognitive development.

The central theme of the book is that the intellectual skills and learning strategies of black children are adapted to their social and cultural experiences. The groundwork for this theme is set in three basic premises. The first is that the culture of black Americans represents one that is different from the culture of mainstream America because the former has African as

well as European roots. Others, including Silverstein and Krate, have taken the position that black American culture is a more limited version of mainstream culture in the United States. Secondly, Hale suggests that the culture of black Americans generates activities that lead to the development of cognitive styles and learning stategies that are different from those produced by the mainstream culture, and functional given the contexts in which they are used. The final point is that information about the cognitive styles and learning strategies employed by black Americans can be used to design curricula that will enhance their intellectual and academic skills.

Although none of these positions is new, Hale's discussion of these issues utilizes research done by anthropologists, psychologists, sociologists and historians in an effort to establish the links between black American and African cultures, and between culture and intellectual functioning. It is the research she uses to make her points rather than the points themselves that distinguishes this book from other works.

The first chapter in the book reviews and analyzes research which attempts to identify how features of black American culture which are remnants of an African cultural heritage. The works of Herkovits (1936) and Nobles (1980) play a prominent role in this discussion. This research though, has been plagued by an inability to separate the contributions of culture from economic, ecological and biological variables. Hence many of the behaviors identified as examples of African retentions are subject to alternate explanations.

The book is on more solid footing in the sections that deal with the second and third propositions -- the relation between culture, on the one hand, and the cognitive styles and learning strategies exhibited by black Americans. There is a good overview of literature on the effects of social class and ethnicity on the intellectual behavior of black children in chapters two and three. These chapters emphasize the ways in which socialization -- via child rearing strategies -- predisposes black children to attend to certain types of information and to organize information in specific kinds of ways. Here again, however, Hale falls prey to the weaknesses inherent in the literature she uses to support her claims. As the Laboratory of Comparative Human Cognition (1982) has noted, cross cultural research has had little success relating cognitive behavior to culturally influenced variables such as child rearing strategies. In order to do so, a researcher would have to hold the variable in question constant while varying other elements that are also features of the culture or cultures being investigated. Because of its difficulty, this kind of approach is rarely used in research comparing different cultures in the United States. As a result, the alternate explanation demon haunts researchers who attempt to relate one of the many variables which comprise culture to a particular behavior.

Despite this problem Hale demonstrates a deft ability to analyze and synthesize material from a variety of different perspectives (e.g., the Piagetian literature, cognitive style research, and cross cultural cognitive research) to construct a model relating black American culture to the intellectual development and school achievement of black children.

Although the amount and variety of the material covered in this book is one of its strong points, it is also one of its weak points. The book attempts to cover too many subjects in the confines of less than two hundred pages. As a result, some of the arguments made, though appealing (at least to this reader), are based on evidence that is insufficient. For this reason, the book is probably best suited for those interested in acquiring an overview of the research related to the intellectual development and education of black children. As the author herself notes, definitive answers to some of the questions and issues raised in this book will have to await future research. In the meantime, Hale's book provides some insights that are both interesting and useful when applied to the problem of how one should go about designing educational environments that foster growth rather than failure among black children.

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* *

*"Pursuit of an anomaly is fruitful
only if the anomaly is more than non-trivial.
Having discovered it,
the scientist's first efforts and those of his profession
are to do what nuclear physicists are now doing.
They strive to generalize the anomaly,
to discover other
and more revealing manifestations of the same effect,
to give it structure
by examining its complex interrelationships
with phenomena they still feel they understand."*

Kuhn T.S. *The essential tension.*

* *

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