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1 Introduction

It would be impossible in the scope of a single short chapter to discuss all the educational issues to which linguistics is relevant or the many areas of education to which linguists are contributing. At the same time, linguistics has had much less impact on education, and teachers know much less about language and linguistics, than the current state of our knowledge about language in education, or the current dilemmas of our schools, would seem to merit. Thus, I concentrate on the importance of an overt focus on the structure of language, and the complex and varied relationships between language structure and communicative functions, for successful learning for all students, regardless of their cultural or socioeconomic backgrounds.

In section 2, I start my discussion with a consideration of the way in which different theories of language impact differently on educational debates. I take as my example the current debate over pedagogies like "whole language," which stress immersing children in language rich activities, but downplay overt instruction and an overt focus on language structure. In sections 3 and 4, I look at the different types or styles of language that are used in and out of school with explicit reference to the role an overt focus on language can play in helping children to acquire new forms of academic language and thinking. In section 5, I take up the issue of language and cultural diversity in classrooms and stress the need for teachers to understand the linguistic and cultural resources that all children, including minority and lower socioeconomic children, bring to their classrooms. Such culturally distinctive resources can serve as a base from which to build educational success for all children. In section 6, I discuss a related issue, the way in which a lack of understanding about the role of language in social interaction – for example, between teacher and student - especially as it intersects with cultural differences, can lead to assuming that "deficits" reside in children, rather than in the interaction itself. Finally, in section 7, I sum up some of the educational interventions that a focus on

language and linguistics suggests are necessary for successful and socially just classroom teaching and learning.

2 Theories of Language

Different theories of language offer different perspectives on educational issues. I will discuss here one area where differing theories of language, based on different approaches to linguistic theory, are currently playing a crucial role in a major educational debate. The two differing linguistic theories I will discuss are "functional linguistics" versus "generativist linguistics." The educational debate I discuss is the one over "progressive pedagogies" (such as "whole language"), that is, pedagogies that immerse learners in language-rich activities, but downplay the role of overt instruction and any overt focus on language structure. Two differences among functional and generativist linguistic theories play a role in my discussion: first, these two perspectives view the relationship between form and function in language and language acquisition quite differently; second, they differ on whether or not they claim there is a significant biological basis for grammar and the acquisition of one's initial language.

Functional theories of language have informed a good deal of educational linguistics (Halliday 1994, Martin 1992, Thompson 1996). Such theories argue that there is in language a close "fit" between form (structure) and function (meaning). On this view, certain linguistic forms have evolved culturally and historically to serve (and are well designed to serve) certain communicative and interactional functions. Thus, understanding the functions a particular form is used to carry out is the key to acquiring and understanding that form. Functional theories tend to downplay the role of biology in language acquisition and to see language development of all sorts (e.g., first and second language acquisition, the development of literacy, the learning of "specialist languages" like those used in the sciences or the humanities) as similar processes of socialization or enculturation (Halliday 1993).

In contrast, generativist theories of language, such as Chomskian linguistics (Chomsky 1986, 1995), see no very close match between language form and language function, form being relatively autonomous from – and largely, but not completely, unpredictable – based on the communicative functions it happens to serve. For generativists, first language acquisition is heavily affected by a biological endowment for language and, thus, significantly different from the acquisition of literacy or later specialized forms of language for which there is no such biological endowment (see Gee 1994 for discussion).

I have pointed out that functionalist theories of language often draw an analogy between first language acquisition and other forms of later learning. This analogy, in fact, has been at the heart of many "progressive" pedagogies (Cazden 1972: 139–42). Progressive pedagogies stress immersing learners in

"hands on" practice in meaningful environments where oral and written language are fully functional for the learners. Such pedagogies (which include movements like "whole language" and "process writing") downplay the role of overt instruction and rely more on learners inferring "rules" and patterns (generalizations) from the (often collaborative) practices in which they are engaged (Goodman 1986, 1993, see Edelsky 1996 for discussion).

Progressivists tend to make the following sort of analogical argument: Children acquire their native languages not by direct instruction (indeed, overt correction seems to have little impact on them), but by being immersed in rich, meaningful, and natural communicative settings. So, by analogy, it might be argued that in other areas, outside first language acquisition, humans learn best when their learning is self-motivated and self-directed in "natural" settings and not "imposed" on them by direct instruction.

This analogy has been attacked recently by a number of generative linguists (Melvold and Pesetsky 1995; 40 Massachusetts linguists signed a petition against the state's new whole language-inspired English standards in July 1996). These linguists have argued that, since biology plays a role in first language acquisition in a way that it does not in later forms of language, literacy, and content learning, these later forms of learning are not properly analogous to first language acquisition. Thus, we ought not to draw educational implications from such an analogy.

Another way to state the generativist view on language acquisition is as follows: the child acquiring language is confronted with lots of "data" - the language she hears everywhere around her - though, of course, this data is always a very small subset of the infinite set of sentences in any language. There are always a great many hypotheses or patterns possible about what "rules" underlie the data (i.e., what generalizations there are in the data), especially granted the creativity of the human mind and the infinity of language. Therefore, *something* must "constrain" the child's "search space" such that the child does not "waste" exorbitant time considering fruitless or misleading hypotheses (see also Elman 1991). And, of course, generative linguists argue that this "something" is in the genes. For other sorts of learning – e.g., physics or literacy – evolution has not had enough time to build into human biology such a substantive and specific "head start," since things like writing and physics have simply not been around long enough in human history. Thus, in these cases, something else – not genes, but, let us say, teachers – must help the learner constrain the search space.

The generative linguists' argument addresses a very real problem. It demands that progressivists develop a coherent theory of instructional "guidance" in the case of literacy and school subjects that can play (replace) the focussing ("scaffolding") role that human biology plays in first language acquisition (Gee 1994). The argument implies that we cannot, at least for most learners, rely too strongly on "immersion in practice," no matter how rich the environment in which the learner is immersed. It, thus, helps us state a major goal of educational linguistics. However, some people have taken the generativist argument further and claimed that it implies a return to a form of direct phonics instruction that stresses letters and letter combinations and the complex and multiple ways they map to sound. This, of course, does not logically follow from the generativist argument. All that follows is the need for some theory of "learning" or "teaching" that specifies *what* can make up for the role biology plays in the case of first language acquisition. Without further argument, we cannot necessarily conclude that this "what" is any particular form of "phonics," or anything else, for that matter.

Furthermore, the argument for the biological basis of language is an argument about *grammar* (and only part of grammar, at that), not everything else that goes under the rubric "language." To a generative linguist, "grammar" names the *structural* (phonological, morphological, lexical, syntactic, and logical) properties of *sentences*. Properties of meaning beyond the "logical form" of sentences and properties of "discourse" (both in terms of how language is put to use in actual contexts and in terms of how sentences are connected together to form "texts") do not (for the most part) fall under "grammatical theory" as generative linguists conceive it. But meaning and discourse are obviously crucial to later forms of language, content, and literacy learning (Gee 1996a). Furthermore, even if strongly functionalist theories were wrong for much of the grammar of our vernacular languages, they could, nonetheless, still be more nearly correct for the sorts of syntactic, rhetorical, and discourse systems connected with specialist uses of language (e.g., the language of physics, law, or medicine).

Educational linguistics alone cannot tell us what form of teaching needs to make up for biology and "constrain the learning space" for later learning. Educational linguistics must be supplemented here by studies in psycholinguistics and cognitive psychology about how the mind works and by studies in the social sciences about how teaching and learning work within and across different cultural and social groups.

For example, psycholinguists have convincingly argued that no one can learn to read unless he or she has some substantive degree of meta-awareness of the "phonological code" (see Adams 1990 for an overview). By the "phonological code" I mean conscious awareness of the phonemic units of the language and the ways these are characteristically sequenced into larger clusters (syllabic sub-units, syllables, and on up to the level of words). While such knowledge is unconsciously part of all native speakers' linguistic competence, gaining "conscious awareness of the phonemic structure of speech is among the most difficult and critical steps toward becoming a reader" (Adams 1990: 412).

Such knowledge comes from practices in which the formal structure of language is foregrounded. These practices may be oral or early literacy activities in which the growing awareness of graphemic principles facilitates meta-awareness of the phonemic structure of speech. Studies of different home cultures have shown that, in certain sorts of (typically, but not always, "middle-class") homes, children spend an enormous amount of time in language and literacy practices which lead to phonological awareness before they arrive at school (Adams 1990: 83–92). Such activities are supported by the guidance of adults and older peers, or they are supported by the structures built into materials (e.g., books) or media representations (e.g., *Sesame Street*).

According to psycholinguists, in addition to conscious knowledge of the phonological code, successful reading requires that the recognition of common letter patterns and common words has been rendered highly automatic (for an overview, see Perfetti 1997). This is so because only then can readers focus sufficient conscious attention on the higher-order aspects of reading (e.g., drawing inferences from the text, making connections across the text, figuring out the meanings of new words in context, etc.). Furthermore, both of these abilities – meta-awareness of the phonological code and automaticity of letter patterns and common words – appear to require a great deal of practice, practice that cannot simply be skipped or remedied through some "quick fix" in school.

It is important to note that much traditional phonics instruction focusses children on letters and the complex ways in which they map to sounds, parts of words, and words. Linguistic and psycholinguistic evidence suggests this is backwards (McGuinness 1997). Children need to be focussed (in contexts where they understand the point of what they are doing) on the sounds and the sound system of the language, on the basic ("unmarked") pairings of these sounds with letters, and, then, on the alternative graphic representations for given sounds.

Given what we have said about literacy, we run into an educational dilemma. For children who come to school without much meta-awareness of the phonological code and who have not rendered recognition of common letter patterns and words automatic, we have to worry about how we can supply (or replace) the large amounts of socially supported practice other children have already had (and will continue to have) at home.

We should keep in mind, as well, that sociocultural studies have argued that home immersion in school-related language and literacy practices connects such practices (and their concomitant values) in a deep way to children's emerging cultural identities (for an overview, see Gee 1996a, 1992). Such a connection (or lack of it) appears to be important for children's later literacy learning and for the ways in which they do or do not affiliate with schools. Many in-school practices do not seem to link to children's cultural identities, or create new ones, nearly as deeply as initial home-based socialization does. Nevertheless, it may well be true that unless children take on any given form of literacy as part of a valued cultural or social identity, it will not be fully mastered. Thus, we need to see what goes on in school as itself a form of enculturation that delivers any type of literacy (e.g., "the basics," literature, science, "critical thinking," and so forth) as part of a larger identity connected not only to ways of writing and reading, but to ways of talking, thinking, acting, interacting, believing, feeling, and valuing, as well. In the end, linguistic and psycholinguistic research can help set the framework in which discussions of, and debates over, literacy pedagogy and curricula are carried out. Such research leads us to see that what is required in classrooms, for diverse learners, is more complex than simplistic debates over dichotomies like "immersion in practice" and "overt instruction" may imply. Children need to be overtly focussed on the structure of oral and written language (all the way from sound and morphology, through syntax and meaning, to discourse) and the way it relates to functions (and this relation is not transparent and differs across different styles of language and genre of texts). They need, as well, to engage in this focussing amidst a great deal of practice (up to the point of rendering "lower level" skills automatic and unconscious, thereby leaving cognitive energy for higher level skills and conscious reflection), practice that comes to constitute a form of socialization or enculturation.

3 Social Languages

Debates about education typically focus on language in the broad sense in which we talk about things like "English" and "Russian" as languages. But teaching and learning in classrooms, especially for native speakers of the language of instruction, is actually rarely about language at this broad level. Rather, it is about what I will call "social languages" (Gee 1996a – what I am calling a "social language" has sometimes been called a "register," though this is often a more restricted term). In fact, social languages become progressively more important as the child advances through school, since the acquisition of different "academic" social languages (in the broad sense of the word "academic") is one of the ultimate goals of the whole schooling process.

A given social language is composed of the lexical and grammatical resources (whether in speech or writing) that a recognizable group of people uses to carry out its characteristic social practices. Los Angeles street-gang members, laboratory physicists, medical doctors, successful middle-school science students, literary critics, and Los Angeles policemen all have characteristic linguistic resources they use to carry out their distinctive social practices. In addition, we all have a culturally distinctive vernacular social language that we picked up as part of our initial linguistic socialization (we might call this our "primary social language").

Social languages can be acquired in a variety of different ways. For example, Rogoff and Toma (1997) argue that in many middle-class families in the USA, caregivers use language with young children not just or primarily to carry out joint activity, which is usually dyadic, but also to focus on words themselves through such things as

labeling objects or events for the sake of indicating their label (e.g., "here is his *hat*" or "Oh, you are putting on the *lid*") and test questions in which the questioner asks for information that they already know ("Where is your *belly button*?") and often evaluates the answer ("Very gooood!"). (Rogoff and Toma 1997: 477)

This sort of practice facilitates early school success, since formal schooling demands an awareness of language as a semiotic object in its own right and not just as a device to refer to the world. And, of course, at school, specific social languages are acquired via yet more direct guidance and overt instruction.

On the other hand, Rogoff and Toma (1997: 477) argue that, in Mayan families in Guatemala, especially when caregivers have not been influenced a great deal by formal schooling, "caregivers usually used language with toddlers to suggest actions and to seek or provide information" as part and parcel of participation in ongoing activities of groups usually larger than simple dyads (see also Rogoff and Toma 1997: 478 and 481). Here there was less focus on language in and of itself and fewer provisions of "language lessons" amidst immersion in practice.

The Russian psychologist Lev Vygotsky (1987: ch. 6), though writing in the 1930s, developed a view of classroom learning that is deeply relevant to the sorts of debates over "immersion" vs. overt instruction with which we started this chapter. He argued that immersion in practice coupled with *a certain type* of overt guidance gives learners a degree of reflective awareness and conscious control over the relationship between form and meaning in a social language not typical of social languages acquired largely through immersion alone. The type of overt guidance that Vygotsky argued for was the sort that focusses the learner consciously on conceptual relationships, verbal links, and connections between form and meaning. He argued that this was the primary goal and effect of efficacious schooling.

Vygotsky further argued that the social languages we acquire with such a significant degree of reflective awareness and conscious control (e.g., the language of science) come to "reorganize," "formalize," or "regiment" (however we want to put the matter) social languages we have acquired earlier, often without much initial conscious awareness, (e.g., our "everyday" vernacular ways of talking about the natural world). We might say that such later social languages can come to serve as "meta-languages" for social languages we have acquired earlier. In fact, we have already seen above that early literacy serves as just such a meta-language for the child's early vernacular oral language: for instance, the graphemic system serves cognitively as a meta-level representation in terms of which the learner can think about the phonemic system of the oral language.

Vygotsky is, thus, arguing that making learners consciously reflect in conceptual and verbal relationships, that is, on the way form and function relate to each other in different types of social languages, leads to a new form of intelligence. It leads to a form of intelligence in which learners have gained a social language within which to think about their other social languages.

Let me give another and more complicated example of one social language serving as a meta-language for another one. This example is relevant, as well, to how children can move, in school, from "everyday" talk about science to progressively more complex forms of talk and thought in regard to science. Biologists, and other scientists, write differently in professional journals than they do in popular science magazines. Consider, for instance, the two extracts below, both written by the same biologist on the same topic (example from Myers 1990: 150):

- 1 *Heliconius* butterflies lay their eggs on *Passiflora* vines. In defense the vines seem to have evolved fake eggs that make it look to the butterflies as if eggs have already been laid on them. (Popular science)
- 2 Experiments show that *Heliconius* butterflies are less likely to oviposit on host plants that possess eggs or egg-like structures. These egg-mimics are an unambiguous example of a plant trait evolved in response to a host-restricted group of insect herbivores. (Professional journal)

The second extract, from a professional journal, names plants and animals in terms of the role they play in (and how they relate to each other within) a particular theory of natural selection, namely "coevolution" of predator and prey. Thus, consider "these egg mimics" (for parts of the leaf), "host plants" (for "vines"), or "a host-restricted group of insect herbivores" (for "butterflies"). Note, too, how the language of the professional passage generalizes over the sorts of things and events discussed in the language of the popular passage (the first extract), and formalizes them within a specific set of (in this case, experimental and theoretical) practices. It also uses linguistic structures that assume one has command over the sorts of linguistic structures used in the popular passage should one need to explicate the professional passage in more concrete terms. This is what I mean by saying that the language of the popular passage.

We might add, as well, that the popular passage itself, as a form of "academic literacy" in its own right, represents a meta-language for, or a regimentation of, yet more "everyday" forms of language. For example, even the popular passage assumes the creation of technical terms that categorize things more "strictly" than we do in everyday language. It assumes, as well, a more specific and careful delineation of the grammar of argumentation than is typical of "everyday" language (e.g., note the chain: "In defense, . . . "seem to have" . . . "that make it look" . . . "as if" . . .).

In a case like the one we are discussing, we see that we have a chain of social languages something like this: everyday vernacular language \rightarrow schoolbased sorts of oral and written language (e.g., early school science) \rightarrow oral and written forms of "popular science" \rightarrow oral and written forms of "professional science." Learning any social language in this chain with a substantive degree of reflective awareness and conscious control tends also to reorganize and give yet greater reflective awareness and conscious control to any of the languages lower in the hierarchy (just as graphemics does for phonemics), including one's vernacular language.

Of course, important ideological effects can happen here. As the language of science, for instance, regiments and reorganizes our everyday language about and understanding of the natural world, we can internalize beliefs and values some of which denigrate our everyday world or work against values we otherwise hold (Gee 1996b). Thus, it is important, too, that students come to a conscious and critical understanding of how specialist languages work, how they arise, compete with other social languages, and change. Such an understanding is sometimes called "critical literacy" (Martin 1991) or "critical discourse analysis" (Fairclough 1995).

This discussion of social languages suggests that having students pay much more overt attention than is typical of schools today to how language works in a variety of different sorts of texts in different social languages is important for efficacious classroom practice. In areas like science, struggling with language in texts, and not just test tubes in labs, is equally important for the acquisition of science in any form that constitutes deep understanding and not the superficial knowledge that is common in schools today, where even good students do not really understand the science they learn in any way that can actually be put to use (Gardner 1991, Perkins 1992).

4 Genre

Our discussion of the role of social languages in education, as well as Vygotsky's views on classroom instruction, leads naturally to a consideration of another current debate in education, namely over "genre approaches" to education. Linguists in a wide variety of countries have argued for an explicit focus on the features of language at a grammatical and discourse level that characterize a specific oral or written language "genre" (Christie 1990, Cope and Kalantzis 1993, Martin 1989, Swales 1990). By "genre" these linguists mean the forms of linguistic patterning in terms of which typical communicative tasks, like reports, explanations, descriptions, narratives, classifications, and so forth, are carried out within particular social languages.

The genre linguists have argued, as well, that teachers and students must have an explicit meta-language within which they can talk explicitly and clearly about form and function in language. Only on this basis can children achieve fluid mastery of specific school-based language practices, especially if they have not come from homes where they were immersed in early school-based literacy practices. Only on this basis, too, can all children achieve critical literacy, which requires one to be able to talk and think about how language and thinking work within and across diverse social languages. It should be apparent that the genre approach is related to the sort of approach I discussed in the last section, though the "social language approach" and the "genre approach" are not often explicitly related to each other, perhaps because one arose in the USA, influenced by Bakhtin (1986) and Vygotsky (1987), and the other in Australia, influenced by Halliday (1994).

The argument of both the social language and genre approaches is, then, that "grammar," in the broad sense of how language form relates to language function, is crucial for efficacious (and socially fair) education. It is such a

focus on grammar, in the midst of immersion of communicative practices, that leads to reflective awareness and conscious control over different genres of spoken and written language within different social languages.

Consider, for example, the following short extract from a science textbook (taken from Martin 1990: 93):

The destruction of a land surface by the combined effects of abrasion and removal of weathered material by transporting agents is called erosion . . . The production of rock waste by mechanical processes and chemical changes is called weathering. (Heading et al. 1967: 116)

A whole bevy of linguistic features mark these sentences as part of a distinctive academic social language. Some of these features are: "heavy subjects" (e.g., "the production of rock waste by mechanical processes and chemical changes"); processes and actions named by nouns or nominalizations, rather than verbs (e.g., "production"); passive main verbs ("is called") and passives inside nominalizations (e.g., "production by mechanical means"); modifiers which are more contentful than the nouns they modify (e.g., "transporting agents"); and complex embedding (e.g., "weathered material by transporting agents" is a nominalization is embedded inside "the combined effects of . . ." and this more complex nominalization is embedded inside a yet larger nominalization, "the destruction of . . ."). No one grammatical feature marks the social language of this sentence. Rather, all these features, and others, form a distinctive *configuration* (Gee, to appear).

This social language also incorporates a great many distinctive discourse markers, that is, linguistic features that characterize larger stretches of text and give them unity and coherence as a certain type of "genre." For example, the genre here is a type of explanatory definition and it is characterized by classificatory language of the form: "*Propositions densely packaged through nominalization* \rightarrow are called \rightarrow *Technical term.*" Such language leads adept readers to form a classificatory scheme in their heads something like this: "There are two types of *change*, namely *erosion* and *weathering*; in turn, there are two types of *weathering*, namely *mechanical* and *chemical*," where each italicized word is rather like an icon on a computer desktop that can be clicked on to reveal more classificatory structure.

Of course, these explanatory definitions may well be embedded in a larger text and be part of a larger genre (e.g., a description, exposition, explanation, report, or what have you) with its own grammatical and discourse features. Genres are how social languages carry out their relatively routine, typical, or repeatable forms of work. While children from school-centered homes may pick up such forms of language through immersion in practices that use such forms of language, children to whom these and related forms of language are more foreign need, the genre linguists argue, a more overt focus on such forms and the work they do. This point returns us to the issue of children who have not had a lot of immersion in "school-based" literacy practices at home prior to and throughout their formal schooling, a topic I take up in the next section.

5 Language Differences in School

One of the most pressing issues in education today is the fact that many children from lower socioeconomic homes, many of them minority children, do poorly in school (Miller 1995). Such children have often had little practice at home with school-based forms of language and interaction. Because of this, it is often assumed that they come to school with "nothing" relevant in the way of language practices on which to base their initiation into schooling. However, in many cases, this is not true. Many of these children come to school well versed in language practices that, while not typical school-based literacy practices, are, nonetheless, rich verbal practices that can be leveraged to good effect by the school. Unfortunately, as I have said, the language practices of these children are often invisible to teachers and even, at times, denigrated. It should be a goal of schooling to allow such children to gain reflective awareness and conscious control over their own indigenous verbal practices as part of their acquisition of school-based social languages (in addition to their acquisition of "standard English").

For example, sociolinguists have known for years that African-American Vernacular English, spoken by many African-American children when they come to school, is a perfectly well designed and "logical" dialect, no better or worse, in grammatical terms, than any other English dialect (Baugh 1983, Labov 1972). Sociolinguists have also known for years that many African American children also bring to school richly intricate discourse practices, such as complex forms of storytelling (Smitherman 1977, Gee 1996a). For instance, consider the story below, told by a seven-year-old African-American girl ("Leona") at "sharing time" ("show and tell"). I have organized the story in terms of lines and stanzas that help to bring out its overall discourse organization (see Gee 1996a: 103–14, Hymes 1996):

Leona's story

FRAME STANZA 1 1 Today 2 it's Friday the 13th 3 an' it's bad luck day 4 an' my grandmother's birthday is on bad luck day

PART 1: MAKING CAKES

STANZA 2

5 an' my mother's bakin' a cake

6 an' I went up my grandmother's house while my mother's bakin' a cake

7 an' my mother was bakin' a cheese cake

8 my grandmother was bakin' a whipped cream cupcakes

STANZA 3

9 an' we bof went over my mother's house 10 an' then my grandmother had made a chocolate cake 11 an' then we went over my aunt's house 12 an' she had make a cake

STANZA 4

13 an' everybody had made a cake for nana 14 so we came out with six cakes

PART 2: GRANDMOTHER EATS CAKES STANZA 5 15 last night 16 my grandmother snuck out 17 an' she ate all the cake 18 an' we hadda make more

STANZA 6

(she knew we was makin' cakes) 19 an' we was sleepin' 20 an' she went in the room 21 an' gobbled em up 22 an' we hadda bake a whole bunch more

STANZA 7

23 she said mmmm

- 24 she had all chocolate on her face, cream, strawberries
- 25 she said mmmm
- 26 that was good

STANZA 8

- 27 an' then an' then all came out
- 28 an' my grandmother had ate all of it
- 29 she said "what's this cheese cake doin' here" she didn't like cheese cakes
- 30 an' she told everybody that she didn't like cheese cakes

STANZA 9 31 an' we kept makin' cakes 32 an' she kept eatin' 'em 33 an' we finally got tired of makin' cakes 34 an' so we all ate 'em

PART 3: GRANDMOTHER GOES OUTSIDE THE HOME NON-NARRATIVE SECTION (35–41) STANZA 10 35 an' now 36 today's my grandmother's birthday 37 an' a lot o' people's makin' a cake again
38 but my grandmother is goin t'get her own cake at her bakery
39 an' she's gonna come out with a cake
40 that we didn't make
41 cause she likes chocolate cream
STANZA 11

42 an' I went t'the bakery with her 43 an' my grandmother ate cupcakes 44 an' an' she finally got sick on today 45 an' she was growling like a dog cause she ate so many cakes

FRAME STANZA 12 46 an' I finally told her that it was 47 it was Friday the 13th bad luck day

It is common today, in movements such as "teacher-research," to encourage teachers to record children like Leona and to analyze their language as a way of gaining insight into the child's culturally specific "sense making capacity," as well as her culturally distinctive verbal resources. So, let's look briefly at Leona's story.

Leona's story is organized, through syntactic parallelism and lexical and syntactic repetition, in an intricately poetic way. Note, for example, that every line in stanza 2 ends on the word "cake" and that the stanza as a whole is organized by an aabb structure: "... bakin' a cake ... bakin' a cake ... bakin' a type of cake ... bakin' a type of cake." Stanza 3 is organized in terms of an abab structure: "go over a house ... make a cake ... go over a house ... bake a cake." Stanzas 5 and 6 are line by line stylistic variations of the same event, an event which stanza 7 "performs" or mimes. Such poetic structuring (including many sound and prosodic devices not transcribed above), typical of African-American oral storytelling, exists throughout the story.

The story also plays on a long-running theme in African-American culture, namely the nature of symbols or signification (see Jackson 1974, Smitherman 1977, Stuckey 1987). The grandmother – the matriarch of the home – eats lots of cakes, big and small, at home and never gets sick. However, when she eats little cakes (cupcakes) outside the home at the bakery, she does get sick and "growls like a dog" (loses her human status). What distinguishes humans from animals is their ability to see the symbolic value of things, to recognize, for example, that though they look alike, a cake made at home is a true symbol of kinship, while one made at a bakery is not. The grandmother's momentary failure to recognize the nature of "real" and "duplicitous" symbols (signs) is what causes her to get sick and "growl like a dog." Young African-American children often help listeners interpret their stories by giving crucial non-narrative, "evaluative" information (Labov 1972) right before the conclusion of the story (older storytellers spread such information throughout their stories).

Leona does this in stanza 10 where she stresses the importance of the fact that the grandmother is going to get a cake "that we [the family] didn't make."

Leona and other African-American children in her class were often told to sit down during their sharing time turns, because the teacher felt they were not "talking about one important thing" (Michaels 1981). The teacher heard such children as meandering among different topics, loosely associating ideas and themes, since she, like many teachers, had little knowledge about the grammatical and discourse features of African-American Vernacular English.

In school, children like Leona are often focussed only on standard English. However, there is evidence that such children (even at high school age) can be effectively introduced to the social languages of literature and literary criticism in ways that juxtapose their own discourse practices with these new social languages so as to allow these children to gain reflective awareness and conscious control over both the new social languages to which they are being exposed and their own dialect and discourse practices (Lee 1993). Such a juxtaposition, of course, requires a meta-language within which teachers and students can compare and contrast different genres and social languages. Students, thus, gain powerful knowledge about language, literature, forms of literacy, and rhetoric in a way that links integrally to their own cultural identity. After all, the sorts of poetic oral practices in which Leona is engaged, even as a seven-year-old, are historically at the roots of literature in the west and elsewhere (e.g., the oral tradition from Homer to Chaucer). They are also used and transformed in a wide variety of "high literature" written by African-American authors.

Again, we see the importance of consciously focussing children on how form and function work in social languages. We see here, too, the importance of teachers focussing on this same issue in regard to the children in the classrooms who are most different from themselves. In this way, they can build on, rather than ignore or unintentionally denigrate, the different sorts of verbal resources children bring with them to the classroom.

6 Social Interaction in Institutions

So far we have concentrated on language and not social interaction in classrooms. But many educational linguists focus on the ways in which language form and meaning, with concomitant consequences for empowering or disempowering people, are interactionally worked out moment by moment in specific educational contexts (Green and Dixon 1993, Gumperz 1982, Lemke 1995). There is not space here to go into details as this is a matter which would merit a full chapter of its own. Instead, I will simply give one example of how "minor" linguistic details can take on "major" importance in interaction and come to have important educational implications (Gee and Clinton, to appear). Consider the following interaction between a white female researcher ("R") and a fourth-grade African-American girl ("S" for student) with whom the researcher is discussing light as part of a school science education project. In the transcript below, a comma indicates a short rise or fall in pitch that sounds as if there is more information to come. A question mark or a period indicates a longer rise or fall in pitch that sounds "final," as if a piece of information is "closed off" or "finished." A capitalized word indicates that that word was said emphatically. A colon after a vowel means that that vowel was drawn out. I have also indicated places where speakers paused briefly and where they lowered the pitch of their voice.

- 1 R: Where does the light come from, when it's outside?
- 2 s: Sun (low pitch).
- 3 R: From the sun (low pitch). (pause) hum
- 4 s: Cause the sun comes up, REALLY early.
- 5 R: um (pause) And that's when we get light (low pitch).
- 6 s: And that's how the the the me (pause) my (pause) me and my class, is talkin' about dinosau:rs, and how they die:d. And we found out, (pause) some things (pause) about how they die:d.
- 7 R: Oh really. Does that have to do with LIGHT?

After a long interaction from which this bit is taken, the researcher felt that the child often went off topic and was difficult to understand. However, it can be argued, from the above data, that the researcher "co-constructed" (contributed to) these topic changes and lack of understanding. And, indeed, there is evidence that this often happens when teachers interact with "non-mainstream" children without proper understanding of their language and culture (for an overview, see Cazden 1988).

Children in school are used to a distinctive school activity in which an adult asks them a question (to which the adult often knows the answer), the child answers, and the adult responds in some way that can be taken as evaluating whether the child's answer was "acceptable" or not (Mehan 1979). In the above interaction, the researcher starts with a question to which the student responds with the word "sun" said on a low pitch and with a final falling contour. This way of answering indicates (in many dialects of English) that the respondent takes the answer to be obvious (this already constitutes a problem with the question-answer-evaluation activity).

The researcher's response is said in exactly the same way as the child's (low pitch, final falling contour) – and in just the position in which a student is liable to expect an evaluation – indicating that she, too, takes the answer to be obvious. The student might well be mystified, then, as to why the question was asked.

In 4 the student adds a turn that has an emphatic "really" in it and which is said as a whole on a higher pitch (basically on her "normal" level) and with a falling contour. This way of saying her contribution indicates that the student

takes this information to be new or significant. She may well have added this information in a search for some response that would render the initial question something other than a request for obvious information and in a search for some more energetic response from the researcher, one that would let the student know she was "on the right track" in the interaction.

However, the student once again gets a response from the researcher (low pitch, falling final contour) that indicates the researcher takes the student's contribution, again, to be obvious. The student, then, in 6, launches off on yet another contribution that is, once again, said in a way that indicates she is trying to state new or significant information that will draw a response of interest from the researcher. The student also here uses a technique that is common in the narratives of some African-American children (Gee 1985): she states background information first before stating her main topic (light), though her "found out, some things" clearly implies, in this context, that these things will have to do with light (which they, indeed, do - she has studied how a meteor blocked out sunlight and helped destroy the dinosaurs). The researcher, listening for a more foregrounded connection to light, stops the student and, with emphasis on "light," clearly indicates that she is skeptical that the student's contribution is going to be about light, a skepticism that is, from the student's perspective, not only unmerited, but actually surprising and a bit insulting (as subsequent interaction shows).

Here the "devil" is, indeed, in the details: aspects of the school-based "question–answer–evaluation" activity, different assumptions about how information is introduced and connected, as well as details of pitch and emphasis (and a good many other such details, too) all work together to lead to misunderstanding. This misunderstanding is quite consequential when the adult authority figure attributes the misunderstanding, not to details of language and diversity (most certainly including her own language and diversity), but to the student herself.

Examples like this one have led many educational linguists to argue that teachers need not only to be more sophisticated about grammar, discourse, and social languages, but need also to engage in their own research-like observations on their own interactional practices with their students. Such a demand amounts to a call for deep changes in how we train teachers and in the role language plays in that training and the subsequent teaching to which it gives rise.

7 Conclusion

I have ranged through a number of areas where knowledge about language and linguistics is relevant to current debates in education. My basic points have been as follows.

- 1 Children do not just pick up school-based social languages and literacy through the sorts of rich immersion in socialization that is characteristic of first language acquisition. Teachers need to supplement such immersion, which is necessary but not sufficient for learning in school, with more overt forms of focussing on the structure of language and its complex relationships to communicative functions within different styles of language and texts.
- 2 An overt focus on social languages and specific genres of spoken and written language leads to conscious control of and meta-awareness about language that is fundamental to real understanding and that reorganizes how students think about their earlier forms of language and ways of thinking about the world. This is, indeed, one of the ultimate goals of schooling, and is particularly important for those children who come to school from homes that have not immersed them in school-based forms of language and interaction.
- 3 Schools often ignore or miss the resources of children who come from "non-mainstream" homes homes which may not have immersed their children in school-based forms of language and interaction, but which have, nonetheless, immersed them in complex and culturally distinctive linguistic and interactional practices. Schools can honor the resources these children bring with them to school and build on them. In fact, they can allow such children to focus on form and function in their own styles of language in juxtaposition to other styles, especially those used in school, as a way to appreciate variation in language, respect their own culturally distinctive forms of language, and gain meta-awareness of how form and function work across different social languages in and out of school.
- 4 And, finally, teachers often assume that when a child appears to make little sense, especially a child from a different social and cultural group than their own, that the problem resides inside the child as a "deficit" of some sort. However, such problems often reside in the very interactions in which the teacher is taking part and in the teacher's lack of knowledge about the culturally distinctive resources different children bring with them to school. This dilemma calls both for better training for teachers in regard to language and linguistics (training which, in the USA, is now virtually non-existent) and for teachers to engage in research on their own students and classrooms as a way to better understand the children they teach.