

have in mind as you read the articles or how you will interpolate them. We cannot predict in what events or circumstances you might use any one of the articles or parts of them or what functions or roles such use might take. And it is quite likely that there will be great variation in the texts brought to bear on the articles in this issue, in the circumstances and events in which they are used, and in the meanings, significances, and consequences they accrue. The situation—like the situation of contemporary research on language in general—is fluid, creative, uncontrollable, and unstable. It is a state of affairs to be enjoyed.

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Intertextuality and Educational Research

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Why Intertextuality

Every text, the discourse of every occasion, makes its social meanings against the background of other texts, and the discourses of other occasions. This is the principle I have called *general intertextuality* (Lemke, 1983, 1985, 1988a, 1990a; for more specialized usages see Kristeva, 1980; Riffaterre, 1980). Intertextuality is an important characteristic of the way we use language in social communities. The meanings we make through texts, and the ways we make them, always depend on the currency in our communities of other texts we recognize as having certain definite kinds of relationships with one another. We can make meanings through the relations between two texts; meanings that cannot be made within any single text.

The discourse practices of a community both build systems of texts related in particular ways and establish the recognized kinds of relationships there may be between texts or the discourses of different occasions. It is important to understand the general principles by which our own community, at least, constructs relationships of meaning between texts. Which other texts do we consider to be relevant for the interpretation of this particular text, and why? What kinds of meanings are made by constructing these relationships between texts? And what kinds of meanings are *not* made because a community will not, or cannot, make these sorts of connections between two other texts available to it?

It turns out, moreover, that many of the same kind of meaning relations that exist between texts also exist between different parts of what we may consider to be a single text. So the principles of intertextuality are also fundamental resources for making meaning within texts (Lemke, 1985, 1988a, 1988b, 1990b, in press; Thibault, 1989, 1991; Threadgold & Kress, 1988).

In much of educational research today, the data record is in the form of texts: transcripts of classroom and small group discourse, talk-aloud protocols, and interviews; textbooks; syllabi; test questions and written responses; institutional documents; student writing in various genres; and observer fieldnotes. Many research agendas require that we construct patterns of relationships among texts:

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between test item and written response, between teacher question and student reply, between student discourse and textbook discourse, between teacher language and community language, between written curriculum document and records of classroom discourse, between a text written by one student and that written by another, and so forth. The identification, classification, and interpretation of intertextual relationships is at the heart of much of the best educational research being done today.

In the sections that follow, I will first try to systematically describe and categorize some of the typical sorts of patterns that we construct between texts of different kinds. Because these patterns are necessarily rather abstract, I will provide a number of examples to help make the semantic basis of the patterns more vivid. Finally, I hope to suggest that educational research needs to consider not only these mainly linguistic semantic patterns, but also how they are integrated in text and discourse with the meaning patterns we construct using media other than language alone.

Patterns of Intertextuality

The members of a particular community make connections of some kinds, but not others; between some texts, but not others. Or at least we are much more likely to construct these patterns. The social practices by which a community constructs intertextual ties between texts are of fundamental concern for text semantics, discourse analysis, and the study of social systems generally, as well as for educational research.

A moment's consideration will suggest that we tend to connect texts that we see as being "on the same topic" or "about the same thing," and that we have both relatively explicit devices for signaling intertextual connections to a reader (e.g., citations) and also more implicit ones (e.g., allusions, unreferenced paraphrases). But how, linguistically, do we establish that topics are the same, even when wordings may be different, and in what ways "the same?" Other than identity or restatement, what are the kinds of relationships we construe between such texts and for what communicative or meaning-making purposes?

To answer these questions systematically we need a theory of language in use, a theory of language as a resource for making meaning that includes a socially and culturally sensitive semantics of text and discourse. Syntax alone is not enough. Universalizing propositions about semantics are mere claims. Even with an exhaustive account of what *can* be meant in a language, we still need, for our present purposes, an account of the sorts of things that typically *are* meant, the meanings that are actually made in a community. Not in the sense of unique texts, obviously, but as repeated and recognizable instances of more general patterns characteristic of the community. We need notions like *genre*, *text type*, *register*, specialized discourse, thematic pattern, ideology, social "voice," and so forth.

A useful starting point is the semantic grammar of M.A.K. Halliday (1976, 1978, 1985), the basis for much work on register, genre, and cohesion in educational research and other areas of applied linguistics. Halliday's basic model describes grammar as a system of resources (choices of grammatical constructions and ultimately of particular words) for making three (always simultaneous) kinds of meaning with every utterance or clause. The first is the topical content, the thematic or, loosely, representational content of what is said (called the ideational or experiential metafunction of language by Halliday). The second, in principle (but never in practice) independent of the first, is the attitude and orientational stance of a speaker toward addressees and audiences, toward thematic content, and toward other possible stances in the discourse community (called the interpersonal metafunction). It includes speech-act functions, value orientations, modalities of probability and obligation, and so forth. The third comprises the resources for making whole text from mere word strings and seeks to account for both structure and texture (cf. Halliday and Hasan, 1976, 1989) in the organization of information in phrases, clauses, and whole texts (the textual metafunction).

These general meaning functions of all linguistic acts are essentially semantic in nature. They therefore transcend syntactic and other structural boundaries and are as likely to figure in the relations between texts as in those within texts. We can immediately recognize that *thematic* intertextual relations, construed between texts on the grounds of being "on the same topic" correspond to semantic similarities in the use of ideational-experiential resources ("field" in register theory). This provides a clue as to what to look for in identifying the linguistic basis for thematic intertextuality.

Corresponding to the second general function, there is indeed also a pattern of intertextuality in our community based on linking texts that have "the same point of view" toward audience or content (e.g., ironies, satires, diatribes). And for the third, we have the common case of linking texts that have the same genre structure (e.g., sonnets, limericks, lesson plans, lab reports).

When texts are the same in all three of these respects—talking about the same things, from the same point of view, in the same genre—we have the strongest basis for considering them potentially relevant for one another's interpretation, that is, as *intertexts* of one another. When they are similar in none of these respects, either we must look to some larger meaning pattern than text itself (for example to a common social activity in which both texts may play a role), or we do not see the texts as relevant to one another (except trivially, say, as instancing the same syntactic patterns or lexical items, and even that with great caution in the absence of wider semantic commonalities).

The intertexts of a text are all the other texts that we use to make sense of it. Some of them are texts that share the same thematic pattern of "propositional content" (cothematic texts). Others may instance the same interpersonal or value-orientational point of view (co-orienting texts). Still others belong to another

element in the same activity structure (coactional texts), or have the same genre structure (cogeneric texts). A poem and a textbook passage, both about evolution, may be cothematic. A speech by a defense lawyer and the text of a letter entered as evidence in the same trial may not necessarily be cothematic, but they are coactional. Any two limericks are cogeneric.

Intertextual connections are thus matters of degree as well as of kind. A typical move in postmodernist textual criticism is to question traditional limits on what may be considered a relevant intertext for the interpretation of the text in question.

Some Examples

We have identified three primary principles of intertextuality: thematic, orientational, and organizational. Because organizational patterns can be semantically heterogeneous (e.g., the case roles in a clause, the different elements of a genre structure), there are actually two different cases here: Cogeneric texts have the same overall organizational structure; coactional texts correspond to different elements within the same organizational structure (of actions in general, and of text-genre writing practices, regarded as action patterns, in particular). The salutation and the closing of a business letter (regarded as elements of a genre) are coactional but not cogeneric; two business letters of the same form are cogeneric. (Using the term cogeneric for both would lead to serious ambiguities.)

Organizational intertextuality is the most obvious and best understood. Genre theory, from the classic (Propp, 1968) to the contemporary (Hasan, 1984, 1989; Martin, 1989; Threadgold & Kress, 1988) provides the basis for analyzing both cogeneric similarity and coactional complementarity. There is no doubt that we need other instances of a genre for comparison in order to interpret any one instance fully. Without, for example, a wide enough experience of the genre of formal definitions, there is no way to see that they are more than propositions or descriptive statements about the *Definiendum*. Their classical *Genus* and *Differentia* pattern of organization implies, for instance, that the word or phrase realizing the element *Genus* is always a category containing both the *Definiendum* and also presumably other members. It also implies that the *Differentia* phrase or clause, as a proposition, would not be true of these other members. Even with experience of other formal definitions many students do not construct all these implicit meanings or the common pattern.

So also with the many rhetorical patterns from syllogistic reasoning and enthymemes to commonplace patterns like Examples-Generalization, Principle-Consequences, and even Question-Answer-Evaluation in classroom dialogue.

Much of the work of classroom research in the last decade or two has concerned itself with the identification of various activity genres (in Australia, Christie's [1989] term *curriculum genres* is popular) and rhetorical pattern genres of the classroom. The literature on the analysis and teaching of written genre

patterns is well known and is too voluminous to cite without prejudice. But when we have before us transcripts of the various parts of a lesson: whole-group teacher-class dialogue, small-group conversations, together, say, with the textbook that was read and referred to in the lesson, and reports written by students during the lesson, we need to understand a great deal more than simply the coactional relations of these texts (cf. Lemke, 1989a, 1989b, 1990a; Wells, in press). We need to understand the relationships among, say, their scientific contents, and among the sorts of social-interactive stances and evaluative points-of-view being constructed in and by them.

Compare the following texts excerpted from transcripts of teacher and student discourse in one classroom on 2 consecutive days:

- (1) What happened was, more than likely is, the crust was pushed up, we say that it's uplifted. And that's why we find these marine fossils up on high mountaintops.
- (2) Like, if y'find *fish* fossils on top of a mountain, you know that once there was water . . . up there, 'n the land *moved* or somethin'.
- (3) Marine fossils are found in mountains of high elevation. This suggests that the crust has been uplifted.

These are just 3 of 15 stretches of text used to analyze the common thematic pattern they all exhibit (Lemke, 1983, 1990a). Text (1) was generated the day before texts (2) and (3). Text (1) is spoken by the teacher, text (2) spoken by a student, text (3) written on the board by the teacher and then read aloud. In some of the other 12 instances, the thematic pattern occurs as a question rather than a statement. In some there is more certainty (high modality, as in (2)), in some less (e.g., (1)), and in others doubt or caution (low modality, as in (3)). There are many synonym substitutions (e.g., *fish fossils* vs. *marine fossils*), many different grammatical and lexical forms to present the Evidence-Conclusion relationship and even the Item-Location relationship in their shared semantic pattern. Some are strictly cothematic in the sense of saying "the same thing" (from the viewpoint of the scientific discourse of this subject); some are not, are "wrong" or inconsistent with the standard discourse. Some present alternative thematic content (i.e., different statements about what is so).

In the course textbook, and in many other textbooks on this subject, essentially "the same thing" will be said again in a variety of ways. It is possible to use linguistic criteria to establish very precisely just what all these texts have in common semantically and how they differ. All the texts, wherever they occur, are potentially relevant for each other's interpretation by the principle of thematic intertextuality. Just as genres are intertextual patterns on the basis of which we construe relations between texts (or portions of a text), so also are these thematic-semantic patterns (*thematic formations*; Lemke, 1983, 1988a, 1988c, 1990a). They are perhaps most obvious in highly standardized discourses like those of the

natural sciences and mathematics, but they can be found equally in poetry, narrative, and other subject fields (including educational research; Chapman, 1992; Lemke, 1983, 1988a, 1990b; Thibault, 1991).

The student in text (2) is basing his answer to a question on the common thematic pattern shared by the question and text (1) from the previous day's lesson. Students will copy text (3) into their notebooks and perhaps use it, or the memory of another cothematic text, to answer a cothematic question on the next test. In science, unlike some other subjects (e.g., literature), it is only the *pattern* that counts as the content of the subject, not any particular text which instances it. Mastery of the pattern, the ability to "say it in your own words," means reproducing the pattern, not the text. Learning the pattern, like learning a genre, requires exposure to many differently worded instances of it (necessary, but not sufficient). The pattern is an intertextual formation, characteristic of a community; it is not predictable from knowledge of the syntax or lexicon of the language used to say it, or even from the semantic potential of the language (e.g., the systems of Halliday's grammar).

It is perhaps worth pointing out that thematic patterns, which have the status of "institutions" (in the technical sense of formal sociology) or of thematic-semantic social and cultural formations in a community, are what are most often mistaken by philosophers and some cognitive psychologists for what they call "knowledge of the world." Fortunately for research, thematic patterns are describable in purely linguistic terms (in functional, semantically rich linguistics, that is) and they are grounded in directly observable linguistic text data. No independent, unobservable *lingua mentis* need be assumed, no long chains of assumptions about the relations between "thought" and language are required. Neither, in fact, is the assumption that our thoughts, or our language, are shaped by the truth of a universally objective "world." Social constructivists and semioticians will see that the logic here is simply that we use language, deploying it according to culturally learned thematic (and other) patterns, to construct a "meaning-world." Language, however, is not our only semiotic resource for doing so. I will return to this important point later.

The last of the three types of intertextual connection is the subtlest and perhaps the most important. Compare the following two texts:

- (4) To suggest that homosexuality is . . . a physical condition . . . rather than an emotional and mental condition is highly blasphemous.
- (5) Today homosexuality is understood to be a psychological condition, . . .

In isolation from their intertexts and the orientational patterns that characterize those intertexts, these two texts seem superficially to be cothematic, to be saying more or less the same thing in different words. In fact they are saying almost exactly opposite things, and certainly are saying them with opposed

attitudes and evaluative orientations, and to opposite rhetorical purposes (see analyses in Lemke, 1988a, 1989c). Text (4) is written from the orientational stance of the Moral Majority organization, whose texts are consistently anti-gay and tend to be written in a condemnatory tone, often to justify political demands to deprive gay Americans of their civil rights. Text (5) is written from the viewpoint of a gay writer in a national gay publication as part of a counterargument against the viewpoint of anti-gay Christian fundamentalists.

In text (4), the appropriate intertexts tell us, "emotional and mental condition" connotes willful and voluntary free choice of homosexuality, which is strongly negatively valued as "sin" from this community's point of view. By contrast, in text (5) "a psychological condition" connotes a natural state-of-affairs (corresponding thematically more nearly to "a physical condition" in text (4)) which is value-neutral from the perspective of its community (and which would be exculpatory for the Moral Majority, who therefore refuse it as a "blasphemous" suggestion). It is not simply the rhetorical aims and value orientations here which define the intertextual alliances and oppositions. Thematic patterns and genre conventions (including rhetorical genre structures) also play a part. But we do culturally recognize such orientational stances or "ideologies" as principles that define which texts are and are not, or are in what ways, relevant for each other's interpretation.

Even the thematic content, when produced in different contexts for different rhetorical purposes, takes on different meanings from a shift in orientational stance. The simplest instance is the transformation in meaning of the same thematic content presented as a statement or as a question. More interesting are cases such as the transposition of educational research claims from a genre informing peers to a very different genre advocating policy (e.g., as analyzed in Lemke, 1989c, 1990b).

Apart from the classical rhetoricians, we owe our basic insight into orientational intertextuality to Bakhtin (1981, 1986) who formulated his principle of *heteroglossia* to identify the diverse social viewpoints or "voices," as expressed in distinctive discourses, that he found so cunningly orchestrated in Dostoevsky's novels. He distinguished these different discourse voices by two criteria: the "ideological" (corresponding semantically in his usage more to Halliday's *ideational* and my *thematic*) and the "axiological," which is essentially the value-orientation perspective of a discourse, or more generally its social "positionedness." Developing specific linguistic tools for doing heteroglossic intertextual analysis is an important part of current research in discourse analysis and text semantics (e.g., Lemke, 1988a, 1989c, 1990b, 1992a; Thibault, 1986, 1989, 1991).

Beyond Text: Multiplying Meanings

Are the principles of intertextuality limited to relations among linguistic texts? Can they be applied more generally to other sorts of semiotic "texts": videotapes,

computer graphics, hypermedia? This is a crucial question for the future of educational research.

Young children do not seem to make a radical distinction between drawing and writing (e.g., Dyson, 1991; Hicks & Kanevsky, 1992), and adults, who have been taught to do so, still often fill their handwritten notes with arrows, circles, underlines, and relevant doodles (cf. Witte, 1992). Technical genres of writing include nonlinguistic symbols (mathematical, chemical, electrical) and specialized diagrams and true graphs of many kinds as a normal part of their "writing." Language, as linguists above all others should know, never occurs autonomously. All written language, by definition, mobilizes the visual semiotic systems of some script, and can make or modify meanings by changes in quality of line, or in print by font, type size, page layout, and so forth. Spoken language must always be acoustically voiced and many linguistically nondistinctive phonetic characteristics, from intensity to duration to voice quality, and so-called paralinguistic features also make and modify meanings in speech. Moreover, natural language evolved in the context of face-to-face interactions, and research has long established the integrated nature of our use of gestures, facial expressions, gaze direction, movement and posture shifts, and rhythms of interactional synchrony, along with language as such (e.g., Kendon, 1990; Schefflen, 1975).

The teacher who explains simultaneously through speech, gesture, and diagrams on the board (cf. Lemke, 1987) is making meaning with more than language alone. We never do make meaning with language alone, and no theory of intertextuality limited to language will carry us as far as educational research needs to go. There are genres of diagrams (van Leeuwen & Kress, unpublished manuscript), there are orientational stances in paintings and video camera angles (Kress & van Leeuwen, 1990; O'Toole, in press-a, in press-b), there is thematic content in arrangements of scientific apparatus (Lemke, 1990a). Classroom research relies on videotapes to record the visible features of action and interaction. Students produce diagrams and drawings, models and collages, videos and computer programs, equations and calculations. And none of these things are produced in isolation from the use of language, but generally are produced as part of observationally unitary acts of meaning-making.

How is the picture on the page an intertext for the text next to it? Surely we do use each to interpret and specify the meanings and saliences of the other. How is yesterday's diagram on the board an intertext for today's verbal answer to a question which had a gesture (e.g., deixis to a visible object) as an essential constituent? How does the role of a written text in the organizational pattern of a social activity (cf. Lemke, 1989b) contextualize and shift its meanings? How are objects and events intertexts for linguistic texts?

How can we systematically analyze the content of a video frame or sequence in relation to the transcript of what was being said during it, other than by intuition as members of the culture?

These questions can only be answered within a social semiotic perspective

larger than what linguistics alone can provide. Linguistic analysis, powerful as it is, can only provide at best a very incomplete account of any actual act of meaning-making. But, it can guide us toward the general principles of semiotic intertextuality that we need.

It is precisely because linguistic meaning-making is only one aspect of every actual instance of meaning-making, and because, to say it differently, language has co-evolved to be always deployed jointly with other semiotic resources, that language bears the traces of the general semiotic functions of all meaning-making. Once we have sufficiently understood these functions in language we can begin to look for the ways in which they are instantiated through the resources of other semiotic systems. I have recently proposed, based on semantic generalizations of Halliday's original three metafunctions for language, new parallel work on visual semiotics (cited earlier) and work on the semiotics of action (Lemke, 1984, in press) that all semiosis simultaneously makes *Presentational*, *Orientalional*, and *Organizational* meaning (Lemke, 1989c, 1990a, 1992a). Moreover, I want to suggest (Lemke, 1992b) that it is precisely through this "parallelism" among different semiotic modalities (language, depiction, gesture, etc.) that the different aspects of a "multimedia" semiotic "text" cohere, interact, and in fact *multiply* each other's meaning potential.

The space of possibilities when we simultaneously use different semiotic "codes" or resource systems is not simply the sum of the possibilities inherent in each, but the *product*. Correspondingly, the patterns of co-occurrence which specify an instance-meaning (cf. text-meaning, utterance-meaning) multiply the specificity of the meaning (at the same time they also multiply the range of possible interpretations or construals of that meaning). Just as we can say things through the relations of linguistic texts (and parts of texts) that we cannot say in a single text (or clause, or element of a genre structure), so we can make meanings through the relations of words, pictures, diagrams, sounds, special symbols, and actions that we cannot make, or make as well, through any of these resources alone.

The multimedia and hypermedia capacities of computers will change what it means to "write" faster than most of us can now imagine (Lemke, 1993a). Although written linguistic text has special features that likely mean it will always be part of the communicative repertory, it will increasingly be only one component among many, and perhaps not even *primus inter pares*. In these new media, written text itself can evolve further in its visual dimensions by incorporating color, animation, scrolling rates, and even appearance and disappearance in time. Spoken language and full-motion video will be fast company even for animated text, and the diversity and power of animated three-dimensional computer graphics, extending the role of the diagram and the drawing, should not be underestimated either. All these media in their interconnected, multilinear configurations (hypermedia productions) will be as readily stored in databases, transmitted over global communication networks accessible to individuals, and

retrieved for use and intertextual cannibalization into others' new works as they can be created.

Semiotic intertextuality will be the cornerstone of our understanding of how meanings are made and used in this brave new world. Hopefully it will be well enough advanced when, in one more generation, full "virtual reality" recording and creative production become widely available and every form that exists in "Reality-One" will be available as a semiotic resource in cyberspace (cf. Benedikt, 1991; Lemke, 1993b; Rheingold, 1991). See you there.

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