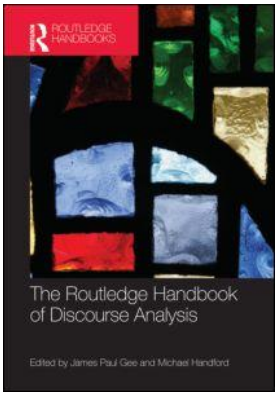

The Routledge Handbook of Discourse Analysis

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Multimedia and discourse analysis

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Multimedia and discourse analysis

Jay L. Lemke

Discourse and me: a short history

What is discourse analysis? And what does it have to do with multimedia? In my view, discourse analysis is a set of techniques for making connections between texts and their meanings. Originally formulated for the analysis of purely linguistic texts, discourse analysis methods have come to form the basis for analyzing "texts" that consist not just of words, but also of visual forms such as images and diagrams (static or animated), full-motion video, sound effects and music, and various interactive features.

There are a number of different intellectual traditions that contribute to discourse and multimedia analysis. I came to this field before it really had a name, because I wanted to understand how physicists came to think and talk and write the way we did, and it seemed to me that we learned these things mostly through verbal and non-verbal communication with people who were already doing it. In the 1970s I was a student and junior researcher in theoretical physics, and it was pretty obvious that I was learning to frame and solve problems, to mobilize theory, and even to tell jokes like a physicist from sitting in classes, reading books, talking with other students and with physics faculty members, and watching the occasional video or display on a computer screen.

Would it be possible, I wondered, to videotape other students doing what I was doing and from the videos to figure out how the ideas and practices of physicists were being "transmitted" or learned? How would you analyze a videotape to achieve this?

As a theoretical physicist, I dealt mostly with text, mathematics, diagrams, and talk about them. I was less concerned about operating experimental apparatus. It seemed to me that most of what I was learning I had to be learning from talk and writing (whether in books, articles, or just on the chalkboard), so I asked around among my friends whether linguistics or anthropology had anything useful to offer on this subject. By good luck I was pointed in the direction of the work of Michael Halliday, a British linguist who was interested in how we make meaning with words (Halliday, 1978). This was not the dominant focus in linguistics at the time, when most linguists were following Noam Chomsky's lead and ignoring meaning in favor of purely formal analysis of grammatical structures.

I had also been reading the work of Lev Vygotsky, a Russian psychologist of the 1920s, who presented a theory of learning and intellectual development based on the hypothesis that people internalized the cultural meanings around them, largely through the medium of language (Vygotsky, 1963, 1978). And I had an interest in cultural anthropology, where there was a prevailing notion that people acquired the habits and values of their communities by active social participation. It was fashionable at that time to see all forms of cultural meaning as being similar to language in that they formed semiotic systems (Levi-Strauss, 1963).

What would we discover, I wondered, if we applied Halliday's analysis of the relationship between wording and meaning to what students and teachers said in a physics class? Extending this idea to the learning of science in general, I persuaded some people at the National Science Foundation in the US to fund a project to videotape science classes in secondary schools and at a university, to transcribe the talk in its contexts of classroom activity, and to apply Halliday's methods of analysis. The funding also allowed me to go to visit Halliday, who had recently moved to the University of Sydney in Australia, and also to go to England, where other people were engaged in similar efforts to do linguistically based discourse analysis (Sinclair and Coulthard, 1975).

It was an exciting time, because what we call discourse analysis today was just being created then (in the late 1970s and early 1980s). There was also, at that time, what later became known as the "linguistic turn" in the social sciences, led by people like the anthropologist Claude Lévi-Strauss and the historian and social theorist Michel Foucault. Lévi-Strauss followed an essentially semiotic approach to the analysis of the texts of myths from indigenous peoples, mainly in South America, but he had much wider influence with his philosophy of "structuralism" (Levi-Strauss, 1963, 1969). Foucault had a somewhat less semiotic and more cultural–historical approach to the analysis of archives of texts from earlier historical periods, which supported his inquiries into intellectual and institutional history (Foucault, 1969). Textual data were becoming the focus of important work in the human sciences.

Discourse analysis was shaped by the kinds of questions people were asking and by the kinds of uses to which this new discipline was being put. It was being developed as a tool for specific purposes, and its different variants reflect the variety of questions being posed. Lévi-Strauss wanted to know if the many different versions of the same myth across different indigenous groups could be seen as systematic variants of one another, rather as Chomsky was showing that different grammatical constructions could be transformed into one another by a set of simple rules (Chomsky, 1965). Foucault wanted to know what kinds of discourses were possible about a given topic in a given historical period, how they changed across the centuries, and how this was related to changing social institutions. Halliday wanted to know what kinds of meanings it was possible to make in the English language and how different grammatical resources were deployed in different contexts to make those meanings.

Today it is easy to see how these different enterprises could support one another, but at the time it was just a leap of imagination. There were also other pieces to the puzzle. The Russian literary theorist Mikhail Bakhtin and his linguist collaborator Valentin Voloshinov had developed in the 1920s and 1930s a theory of the inherent *dialogism* of texts—that is, of the sense in which anything said or written tended to situate its meanings in an implicit dialogue with other texts (Voloshinov, 1986; Bakhtin, 1973). This led to a general principle of *intertextuality*, which connected the work of Lévi-Strauss and Foucault to the *social semiotics* of Halliday. Pierre Bourdieu was combining traditional quantitative sociology with an interest in the development of a social or cultural habitus, a mostly unconscious disposition to do and say things in particular ways, which were like those of others in the same social position (Bourdieu, 1972). Basil Bernstein was connecting a kind of linguistic habitus to social class differences in learning in schools and primary socialization in families and turning to Halliday's linguistic methods to find supporting evidence (Bernstein, 1971).

In 1981 I found myself with a hundred pages of transcript of dialogue in science classrooms, a number of sociocultural frameworks for making sense of the general phenomena, and a set of specific linguistic tools for analyzing various aspects of the meanings being made. I had the overhead lights and the floor tiles, but the task of furnishing the room remained. What lies between the general theories of social learning (Vygotsky, Bernstein) and sociocultural

structure (Lévi-Strauss, Foucault, Bourdieu) on the one hand, and, on the other, the line-by-line, clause-by-clause analysis of the meaning of what was being said and done in these classrooms?

Everything. Discourse analysis and its multimedia successors are about filling in the gap between macro-social theory and micro-social data. It is about construing patterns of various kinds, at some intermediate levels between what Halliday called the "system"—what is possible—and the "instance"—what actually happened this time – in order to say something about what is *typical*. And not just what is typical in general, but what is typical *for whom*, *when*, *and why* (Lemke, 1995).

Most of Halliday's work was a description of the grammar of English as a set of possibilities, linking each option that the grammatical resources of the language make available (such as singular or plural, past or future, transitive or intransitive, interrogative or imperative) to the kinds of meanings we make with it. But he did this within a larger theoretical framework, which he and the group in Sydney called "social semiotics" (Halliday, 1978; Hodge and Kress, 1988). In brief, it was a model of the relationship of language to society and it held that meaning was made by language in use in a context of situation and in a context of culture. Every different social setting evoked a different meaning potential, a different set of probabilities that particular meanings would be made by using particular resources from the grammar of the language.

This entailed a theory of which features of the setting were related to which kinds of meaning that could be made with the language. And it went both ways; that is, using language in part made or changed the nature of the setting, just as a given setting evoked the use of certain sorts of language. In this way it was possible to understand such notions as *register* (the kind of language typical for a particular kind of setting or activity) and *genre* (the forms of sequential discourse that people in a community use for particular purposes).

I had a setting—the classroom—and within it a variety of activities, from going over homework to explaining new concepts to having a dialogue about the best answer to a question. There were spoken genres, such as extended sequential dialogue in which teachers posed questions and evaluated student answers to them, and written genres, such as textbook chapters and student lab reports.

But there was also a great deal more. There were patterns of semantic relationships among technical terms—patterns that were worded differently but remained essentially the same across textbooks, classroom dialogues, and tests or curriculum documents. There were typical rhetorical patterns of reasoning and logical justification that appeared again and again. There were regularities across different sessions and different classes in how lessons started and ended. The room began to fill with furniture (Lemke, 1990).

I had begun from an interest in seeing how the conceptual content of physics was embodied in the dialogue between teacher and student. Over the course of a few years of analysis of the data, I came to see that this was just one part of a much more complex social process, linked to such matters as power, control, authority, and respect in the social relationships of the classroom, and to wider beliefs and values about the nature and role of science in society. People were expressing feelings and evaluations that were inseparable from the process of learning. Students were learning not just facts and theories from science, but ways of behaving in classrooms and beliefs and values about science, society, and themselves. The meanings being made in the classroom could often not be understood apart from other meanings and texts, which were not present in the classroom. The learning process and its stumbles were also part of longer-term developmental processes of students' (and teachers') identities, careers, and lives outside school.

The discourse of the science classroom was a window on much more than science education; it was a window on a society and a culture, just as social semiotics was claiming that this had to be the case for any use of language.

The importance of discourse analysis was not just as a tool to see what was happening in some event. It was a tool that could enable us to look far beyond the immediate events, whatever they were. Indeed you had to look beyond in order to understand what was in front of you.

From discourse analysis to multimedia semiotics

These were *science* classrooms. Meaning was being made all the time with media other than language: diagrams, mathematical and chemical symbols and formulae, pantomimes of natural processes, physical demonstrations of scientific phenomena, slide shows and films, 3D physical models, and so on. Teachers and students were not just talking and writing, they were also pointing, drawing, pouring, connecting wires and batteries, using calculators, and passing notes, and staring out the windows.

Science is an integrated description of the natural world in words, symbols, numbers, and diagrams. The language of science is a multimedia "language" or, more precisely, a multimodal semiotic system (Lemke, 1998b, 2002a). A semiotic system is an interrelated collection of signs or symbols that can be deployed to construct more complex meanings (or at least assemblages of signs to which meanings can be assigned by some system of conventions of use). Each separate semiotic system is a resource for making meanings, and, for historical and physical reasons, these different resources can be combined. They have evolved from one another (as mathematics evolved from language), or as partners of one another (writing and drawing, or speaking and gesturing), and in real life we simply cannot physically make meaning with only one semiotic system at a time.

If you write, you are deploying a linguistic meaning resource and a visual semiotic system (fonts, alphabets, paragraphing, etc.) together. If you speak, you are probably also gesturing; but, even if the gestures are not visible, there are other auditory–acoustic meaning systems in play (tone of voice, local accent, voice qualities that reflect health and mood, etc.). If you draw or see a picture, you cannot help, at least subvocally, naming some parts of what you see, and hence interpreting the image, in part, through language—as well as through the visual semiotic system of depiction. Every abstract sign that occupies some niche in a formal semiotic system has to be realized as some physical material signifier, and that in turn can always also be "read" according to other semiotic systems, in addition to the one that may have originally motivated its presence.

So all meaning-making is in fact multimodal. We can make a formal distinction between modes (different semiotic resource systems) and media (different technologies for realizing meanings that are made possible by these systems). We often also classify multimedia phenomena according to the sensory channels used by the technologies (auditory–acoustic, visual, tactile, etc.). This multimodal, multimedia character of meaning-making happens to be particularly obvious in the case of scientific communication, teaching, and learning.

Very early on I analyzed the role of gestures and chalkboard drawings in my classroom data, using videos and fieldnotes as well as transcripts (Lemke, 1987). Making multimodal transcripts is an art in itself, and one that requires and implies many theoretical choices (Ochs, 1979; Baldry and Thibault, 2005). But there was at that time (in the early to mid-1980s) no formal analogue of Halliday's meaning-centered grammar yet available for analyzing gestures or drawings and diagrams.

A number of us realized that there was no reason why the general principles of social semiotics could not be applied to other semiotic resource systems in addition to language. Michael O'Toole (1990, 1994) and Gunther Kress and Theo van Leeuwen (1996) were among the first to extend

the theory to visual semiotics. Later, O'Toole's student, Kay O'Halloran (2005), tackled the extension to basic mathematics. Van Leeuwen has also worked on the semiotics of music and sound effects (1999), and on physical objects like toys and Lego blocks (van Leeuwen and Caldas-Coulthard, 2001).

From my own earliest work, I had always considered that action itself was in some sense the overarching or primary semiotic system. Human acts are meaningful and they do form a semiotic resource system. This approach converged with the Vygotskyan tradition, specifically with the work of A. N. Leontiev (1978) on cultural–historical activity theory. Speech, gesture, writing, and drawing are all integral parts of meaningful human activity, and that is really what I was looking at in the videos of science classrooms, even if I could only analyze them piecemeal, and with a primary focus on language.

Video is a multimedia and multi-channel technology. Its content is multimodal, meaningful through the combination of (usually) action, language, non-speech sound effects, and various visual semiotics. In my classroom recordings bells would ring, students would make rude noises, things would go pop, people would move around the room, teachers would draw on the board while talking about what they were drawing, students would gesture when they couldn't find the right word, and so on.

What is more important to realize than just the simple fact that there are multiple media and semiotic systems in play is that they are usually tightly integrated with one another in real time. Meanings are made through the co-deployment of different modalities, both consciously and unconsciously (or automatically). To make sense of what is going on, you need to be able to integrate all the different modes of meaning-making, and that is a very complex task, which most of us learn to do very well, at least in some settings. Unfortunately it is not something we are explicitly taught to do, even when the genres and conventions of meaning-making are as unfamiliar as those of the culture of science are for most students (Lemke, 1998a).

How does the integration work? In each case the details are somewhat different, but there are some common general principles (Lemke, 1997, 2002b). One of the most important is the combinatorial or multiplicative principle, which derives from information theory. In essence, each semiotic mode contributes a set of possible meanings, only one of which usually actually occurs at a particular moment or point in the multimedia text. In information theory, the informative value of that one depends on its not being any of the others, and the more others there could have been, the more informative, in principle, the one that does occur is. The informativeness of a cluster of such signs from many different semiotic systems, and therefore from many different sets of alternative possibilities (one word vs. other words, combined with one image vs. other images and one sound vs. other possible sounds, etc.) is again in principle the multiplicative product of the contributions from each semiotic system. Specific instances are more complicated, because often combinations of signs are so typical and predictable that their informativeness has to count more nearly like one unified sign than as two or more independent ones.

But we are not interested here in quantifying multimedia information, but in figuring out how joint meaning results from the meanings we can describe for each sign in its own semiotic system. Each sign, on its own, has a range of potential meanings or interpretations. In general that range gets narrowed down by what is typical in a particular context or setting. And in multimedia the signs in the other modalities (i.e. semiotic systems) are primary contexts for each other's interpretation. The interpretation of the whole multimodal complex of signs has to make consistent sense, in a way that fits with the normal range of potential meanings for each component sign separately. In practice, consistency is established among clusters of typically linked (collocated)

groups of signs. Human beings happen to very good at this sort of pattern construing. We get a whole lot of pieces and we see a whole, a consistent meaningful whole arising from the heterogeneous elements.

Of course, this effort can still result in several different possible holistic or joint meanings for a multimodal cluster of signs. Which is why we also depend on typicality: on knowing what is most likely being meant, given the situation and setting, the culture and subculture, the field, the discipline, the topic, the attitudes of the producers, and so on. We use our knowledge of persons, settings, expectations, genres, registers, and especially of other "texts" that have something in common with the one we are figuring out (or constructing) at the moment. In fact there are many kinds of intertextuality, many principles according to which one text or multimedia production is considered relevant to the interpretation of another one. (For a related view of the extension of discourse analysis to multimedia, see Iedema, 2003.)

Multimedia and transmedia: who is Harry Potter?

Let's consider an example. Who is Harry Potter? That is, how do we form our sense of what this imaginary fictional character is like as a person? We can begin from the original verbal descriptions in J. K. Rowling's novels, and also consider what the narrative text tells us about Harry by means of what he says and does, how others react to him, and so on. But the odds are that the book will have come with a jacket or a printed cover with a full-color drawing of Harry Potter. How do we integrate our image of Harry from the text with the actual image of Harry on the cover?

This example was chosen because Harry Potter is not just a fictional character or a set of novels. Harry Potter is a transmedia franchise, a brand, an industry. Fans of Potter will know him not just from the books and their covers, but from the films, where he is portrayed by a particular young actor. And perhaps also from the computer games, where they themselves can play Harry's role, or that of one of his friends or enemies. In the films we hear Harry's voice, we see how he moves his body, and we see his facial expressions. In the games we can get a sense of what it might feel like to fly on his broomstick or to wave a wand and execute a magical spell. And we can buy a replica of the wand that is seen in the movies, we can even eat a commercial version of the fictional candies in his world.

This is multimedia with a vengeance. It is systematic intertextuality on a vast scale, across media as diverse as books, films, games, visual art, and commercial artifacts. And all of these potentially contribute to the formation of our sense of who Harry Potter is, to a complex meaning that can, nevertheless, feel to us like a single sense of him, a holistic compound meaning much like the sense we have of who persons in our own lives are. How do we do it?

There is certainly as yet no complete or satisfactory answer to that question, but it represents the kind of inquiry that multimedia analysis is about. If our example were not Harry Potter but, say, Richard Nixon or Ronald Reagan, we would be doing multimedia analysis not in the field of popular culture studies, but in that of journalism or political science. Again, there would be textual sources, films, both fictional and documentary, video and archival footage, print cartoons, and no doubt photographs, figurines, and maybe even a computer game.

Nor are these phenomena limited to persons, real or imaginary. Places also have their meanings, constructed for them across texts and media: Harry's Hogwarts School, or television's New York or Baghdad. How do you construct a sense of a place you have been to, but have also seen represented over and over again in photographs, films, books, and the like? These may not always converge to a unified sense of the place (or the person), but they are always the product of multimodal meaning-making across semiotic systems, media, and "texts."

Phenomenology and affect: complementing semiotic approaches

It should be apparent by now that I am trying to expand and complicate our sense of what is involved in discourse and multimedia analysis. It is not just what is in the text or in the video, but what we need to know about the context and culture that helps give it meaning. It is not just about one text at a time, but about extended complexes of potential intertexts, which may be seen as relevant to any one text's interpretation.

Every text and multimedia product is not just a window on what they present, but a window on the society and culture in which they were created. How we interpret them is also a mirror of and a window on our own society and culture. Politics, economics, and ideology are never irrelevant to interpretation. Nor is history, nor is an understanding of how the texts were constructed and of how and why they were published, distributed, bought and sold, legally encumbered, and so on.

Good, persuasive, insightful discourse and multimedia analysis is always *critical* analysis. Not simply in the basic sense of considering alternative interpretations and grounds for various claims, as all good reasoning does, but in the more specific sense of critical theory: applying a skepticism toward the justice of institutions and the moral status of beliefs and values, including our own. Why?

Because interpretation (and construction or authoring) of meanings is always selective contextualization, is always deploying a sign within a field of interpretive conventions that belong to some social order, complete with its history and its politics; that is, complete with the covert as well as the overt social, political, economic, and ideological functions of the typical discourses and conventions for interpreting meanings and deploying signs in a community—or at the intersection of various communities. For the intersection of discourse analysis and critical theory, see Fairclough (1995).

Bakhtin's principle of dialogism, the inspiration for seeing intertextuality as central to meaning-making, led him to recognize that meanings are made within systems of diverse social voices and that texts may ventriloquate multiple voices and speak as if in dialogue with multiple voices. Not the voices of persons as such, but the voices of social viewpoints: of men vs. women, of working-class vs. middle-class families, of fundamentalists and atheists, physicians and physicists, reactionaries and radicals. The organized diversity of social voices, which he called society's heteroglossia, is a key part of the context of culture within which every meaning is made (Bakhtin, 1981).

Bakhtin characterizes these social voices or viewpoints not only by their ways of representing the world—that is, by what they pay attention to and how they speak of these things—but also by their value judgments and moral stances. It is not just how we see the world that matters, but how we feel about it.

And here is yet another dimension that needs to be added to make discourse and multimedia analysis faithful to the world of meaning: seeing that there is no meaning without feeling. We do not just form a picture of Harry Potter, we get an impression of him, a sense of him, which would not be complete without our sense of how we feel about him. If a great many people did not feel strongly, and mostly positively, about Harry, they would not be devoting many, many hours to reading these books, watching these movies, and even playing the computer games, putting posters of Harry on their walls, and chewing on candy that sports his recommendation. And equally, if in some respects oppositely, regarding Richard Nixon or Ronald Reagan.

Where do these feelings come from? In the case of Potter we know that they cannot come from anywhere other than the multimedia representations of his character and the opinions of others about what they see represented there. This is no different, for most of us, from the sources

of our feelings about politicians, celebrities, places we have never been to, or activities we have never performed. Even if we have had direct experience, it's pretty clear that our longer-term sense of such matters combines that experience with the many, many media representations and discourse viewpoints about them that we have encountered.

How we feel about something also clearly influences how we interpret its meaning. There is no easy way to separate the feeling of love or hatred, fear or pride, anxiety or desire from the meaning we attach to a representation of an action, a person, a place, an event. Meaning and feeling are two words for a single experiential reality. One emphasizes the descriptive, the other the evaluative aspect of our sense of something. Contrary to some traditional beliefs, we also know that extended reasoning is not possible without feeling-based choices and decisions (Damasio, 1994), and that feeling, like meaning, is actively constructed and arises in our participation in extended (situated, distributed) interactions.

We inherit, however, the biases of our intellectual ancestors, who lived in times when there was little separation between partisan politicking and adherence to intellectual (including religious) dogmas, and when violent feuds and wars, foreign and civil, were fought because of passionate feelings about matters of meaning. From those times came the eventual denigration of feeling as something opposed to reason, something proper only to women and children and serfs and laborers, and not to gentlemen of sober dedication to intellectual pursuits.

So feeling was prised away from meaning, affect separated from cognition, emotions opposed to reason, and their experiential unity denied and replaced by formal, analytic representations.

In today's world we need to understand that unity. We cannot blame passion alone for extremist violence without understanding the meanings that support and give rise to that passion. Nor can we hope to persuade people to take constructive courses of action if we do not address their feelings as well as their rational interests.

Mass media, popular culture media, even elite media cultivate feelings along with meanings, when they are successful. Meanings are made in part as expressions of feelings, and they are interpreted in part through how we feel about them and about alternatives to them. Discourse and multimedia analysis cannot succeed in their aims if they do not consider both meaning and feeling, both in relation to production/authorship and in relation to reception/interpretation.

Feeling and meaning meet in evaluation, and we are beginning to accumulate some systematic knowledge of how evaluations and appraisals operate, at least linguistically (Lemke, 1998c; Martin and White, 2005). By comparison with our extensive understanding of semiotic processes of meaning-making in language and other semiotics, we still know relatively little about affect, emotion, and feeling. But I think we at least know that they are important, indeed crucial, to the analysis of how we gain a sense of what is presented to us in media, how we react, and what kinds of meanings and feelings we in turn construct as our own next moves in the never-ending dialogues of life and art.

Trajectories and traversals: time, space, and media

I want to conclude with some discussion of basic questions of method in discourse and multimedia analysis.

In our transmedia example of the Harry Potter franchise, we considered the problem of how meanings are made not just across different texts, but across very different semiotic media. It was also clear then that these meanings are being made across time and space. To read all the Harry Potter novels, and to see all the films, much less to participate in any other aspects of the franchise, takes an extended time and more or less requires activity in different places. Certainly in their original versions the books were published about a year apart over seven years or more, and the

films were released over an even longer period, extending well beyond the publication of the final novel.

Meanings were being made across long intervals of time, both by producers and by consumers. The same is also the case if we re-read the same book years apart, or if we watch episodes of a television series in re-runs again and again over many years. Meanings are made on different timescales. There is the meaning we make when initially reading a line or paragraph of text, or viewing a scene of a few minutes in a film or video. There is the meaning we make thinking back or reading back to that bit after we have gone on much further in the same text, or in a relevant intertext. There are meanings (and feelings) we make over years, and even over a lifetime of engagement with some set of texts (and, of course, by "text" here I am understanding an entity that includes paintings, symphonies, films, games, etc.).

So far I have raised this issue of extended encounters with a single work, a serialized work, or a set of works in a connected franchise. But the experience of life, day by day, is itself heterogeneous across media and genres. We move from one encounter to another, from a conversation to an email, to a sales transaction, to a meal, to a piece of music, to the gym, to the bookstore, to a few hours of channel-surfing on the television.

And yet we make some sort of coherent sense, meaning-with-feeling, of our days and of our lives. Along traversals of experience that cross boundaries of genres, activities, and media, we are always making some sort of cumulative sense of things. We are connecting the meanings and feelings of a few minutes to those of a day, a week, a decade, a lifetime. And we are using discourses and other semiotic media resources to do this (personal diaries, favorite books and programs, etc.).

How do the meanings of minutes add up to the meaning of a lifetime? Every distinct experience we have, every activity we engage in, lasts or takes place over a relatively short timescale, minutes to hours. A few projects we undertake may extend, with long interruptions, over months or years. The continuities we construct for lifelong ambitions or agendas, or even those that just take years, are retrospective "meanings made" far more than they are actually on-going processes with any coherence on those long timescales.

To what extent do our lives add up, then? Certainly there is coherence of meaning and feeling over long timescales, even if it is constituted from many separate events and activities, as with long-term personal relationships, careers, research agendas, hobbies, and so on. How do we use discursive and semiotic resources to construct these cumulations and continuities? And how do texts and media both aid and emulate this process, making longer-term wholes out of sentences and scenes?

Time figures importantly in all media, whether it is the durational time of reading or viewing, the actional timescales of writing and producing media, or the phenomena of pacing, interruption and resumption, multiple nested rhythms of activity, repetition and variation, and so on. Temporal considerations and temporal phenomena are fundamental to both meaning and feeling in texts and media.

So also, though at this point perhaps even less well understood, are matters of space and place. The fact that many media, such as semiotic technologies, are portable (and more so now than ever before) means that we use them in a far wider range of places, and across much longer separations in space, than in the past. Where we read or write or make photos and videos matters in some way to the meanings made. The advent of immersive-world computer games has called our attention once again to what Bakthin called the "chronotopes" of narrative fiction, and now also of interactive adventures. We move, or the characters and action we follow and identify with move, from place to place in the course of the story or adventure, and we/they spend varying amounts of time in each place. Some places are sites of important action, others are merely scenery

we pass through. There is a rhythm of movement and action on the scales of travel or traversal through fictional and simulated worlds (Lemke, 2005b). Places themselves are filled with, and define, contexts of interpretation for texts and other semiotic media (Scollon and Scollon, 2003).

And there are spaces other than physical space, real or virtual. In hypertext we jump from one frame or media display to another through an informational space, a way of making sense metaphorically of links in a relational database, but one that succeeds because of its similarities to travel through physical space. As we move from place to place, seeing and doing different things, so we jump from scene to scene in hypertext or hypermedia, while making meaning-and-feeling connections along the trajectory we create as we move. The more heterogeneous the scenes or media presentations we encounter, as when we surf the web casually, jumping from website to website, from media genre to media genre, the less this resembles jumping around within a single text or work, and the more it resembles the kinds of meanings we make from the heterogeneous experiences of a day in our lives.

I tend to distinguish these terminologically as *trajectories*, within relatively homogeneous meaning domains, vs. *traversals*, crossing multiple boundaries of heterogeneous genres, institutions, and activities (Lemke, 2005a). Discourse and media analysis provide us with potential tools for delineating the nature of the homogeneities and heterogeneities in detail, and for identifying the kinds of semiotic resources and practices involved in constructing meaning along these experiential paths.

Discourse, and multimedia analysis itself, occur along such trajectories and traversals. It is part of the life of the analyst, and, while our analyses may be collaborative and in broad agreement with those of others, they remain views from somewhere, reflecting the focus of our interests and the selection of our tools. You should be able to see yourself, and not just your object of study, in the analysis you make. You should be able to see your cultures and histories as well as its. If you can, you will never have made the journey in vain, and your traveler's tale may help the rest of us make better sense of the country we all travel through. As I hope my tale here has done for you.

Further reading

Halliday, M. A. K. (1978) *Language as Social Semiotic*. London: Arnold.

Influential essays situating linguistic discourse analysis within a wider theory of language, society, and culture.

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