

*“English” at the Crossroads*  
Rethinking Curricula of  
Communication in the Context  
of the Turn to the Visual

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NEW QUESTIONS FOR ENGLISH

**M**Y PRESENT JOB REQUIRES ME TO THINK ABOUT THE ENGLISH CURRICULUM in the upper years of schooling in England. I can't think about this without also thinking about the subject in the earlier years of schooling. Nor can I think about it other than in the context of the vast political, social, economic and technological changes which characterize the present, and which will, if anything, become more intense over the coming decades. These lead me to the conclusion that the purposes of the curriculum need to be questioned. If in the past, the curriculum had been (seen as) the site of the reproduction of young people in the image of their society and of its values, that view clearly is no longer tenable. There are no stable values, no reliable or agreed structures. All we can know is that tomorrow will not be like today, let alone like yesterday. The idea therefore of making the young in the image of what we know today, which is itself a version of what has been handed down to us from yesterday, will no longer do. Curriculum now needs to be focused on the future: its task is to provide young people with dispositions, knowledges and skills which they will need in their future social lives. So one urgent task is to try to understand what skills, aptitudes, knowledges, dispositions concerned with representation and communication young people will need in the world of the next two decades or three, in order to be able to live productive, fulfilling lives.

What will the subject English need to become in order to function as an essential part of the education of young people? What does it need to focus on? What questions, issues, concerns, knowledges need to be central? At the moment the prevailing commonsense is that English is a language-based enterprise; the debate is whether the emphasis should be on practical issues such as spelling, syntax, or proper forms of speech, in other words, English as communication; or whether it should focus on questions of value, on aesthetic and ethical issues, in other words English as the curriculum of 'culture'. In

practice, and unsurprisingly, in its different versions it becomes a quite variable mixture of both, depending on many factors, of which the characteristics of the community around the school and of the community in the school and in classrooms may be the most significant. In the meantime, however, the landscape of communication is changing fundamentally. This can't be ignored in the school-curriculum. If English is to remain relevant as the subject which provides access to participation in public forms of communication, as well as remaining capable of providing understandings of and the abilities to produce culturally valued texts, then an emphasis on language alone simply will no longer do. English will need to change.

This issue is addressed in this chapter in two parts. On the one hand, I suggest that the visual is becoming prominent in the landscape of public communication, and that this cannot be ignored by school-curricula. On the other hand, I suggest that our present theories of language and meaning are simply inadequate and inappropriate for the task which English will need to perform. Our present theories of semiosis are theories founded on convention and on use. Consequently, creativity is regarded as unusual, as rare and therefore most prized. This theory of semiosis is not adequate to what actually is the case: it is implausible as a theory. An apt, plausible theory will be founded on innovation, on constant transformation and change, brought about by individuals. In that theory creativity is usual, and conventionality, in its strong form of “doing things as they have always been done,” will be unusual. That new theory is required by the demands made of a curriculum focused on the needs of the future.

The newer technologies of representation and of communication in any case suggest the second of the two theories as appropriate: ‘conventionality’ does not provide a means of understanding or using these new media. This is not to say that countervailing forces—discernible even now—will not become active and powerful. Control over communication and over the means of representation is, as always, a field in which power is exercised. We know that the economies of the postindustrial societies will be information and knowledge-based economies, in which the capacity for innovation will be the required and the most highly prized commodity. A curriculum based on theories of semiosis of convention and use cannot hope to produce human dispositions deeply at ease with change, difference, and constantly transformative action. There is therefore a coming together of developments—economic, technological, social, political—which requires a rethinking of the processes and the means for representing ourselves and our values and meanings, broadly the set of things named in anglo-phone countries by the word “literacy”.

### Representation and Literacy

One issue which arises in sharp form in any rethinking of modes of representation and forms of communication in the context of deep technological changes, is that of the concept of literacy itself. The word does not occur in romance languages, nor in German. Those languages have a more specific

term, focused on control of the alphabet: *alphabetisme*, *Alphabetismus*, etc. The English word collects together a vast and quite disparate range of skills, aptitudes, processes, dispositions: and it presents them as though they were all of one kind. These range from competence in handling letter-sound correspondence, via the competence of producing grammatically and textually well-formed texts, to the competence of subtle understandings of complex text, to the production of 'sensitive' responses to aesthetically valued texts. As a noun, the word "literacy" presents this most diverse range of phenomena as one reified thing. The possibilities offered by electronic technologies of communication raise this question of the constant metaphoric extension of the term literacy sharply. My own preference is for a disentangling of all these diverse processes and phenomena covered by the cloak of the term "literacy", and discussing them separately, evaluating each for its uses and potentials. I am extremely reluctant, at a time when deeply transformative processes are remaking the means of representing and communicating to stretch this cloak even further by further metaphoric extensions of the term literacy.

Let me mention just some of these processes, to indicate the range and direction of these changes. The visual is becoming more prominent in many domains of public communication. From a different perspective, this is to realize that written language is being displaced from its hitherto unchallenged central position in the semiotic landscape, and that the visual is taking over many of the functions of written language. This shift is, from yet another perspective, a shift from the temporal-sequential logic of spoken (and to a somewhat lesser extent written) language to the spatial-simultaneous logic of the visual. This shift may lead to a fundamental challenge to the form which is perhaps most typical of speech, namely narrative, and its replacement by the visual/spatial display. I discuss this at some length below. These are at the same time challenges to conventional notions of text, and of its limits. Contemporary semiotic processes—based only in part on the "affordances" of electronic media—seem to signal a shift from text as a cohesively and coherently organized representation of the world to be read, to the notion of unorganized semiotic resources to be used. This parallels and reinforces the move away from narrative. Neither hypertext nor the contemporary rock-video are organized through narrative structures. In all this the status of the book is also coming into crisis. The school text-book may serve as an example. It is no longer a semiotic object defined by language: not units of knowledge coherently organized around the chapter, but resource materials organized by the unit of work (presenting a set of tasks to be performed). Whereas textbooks even in my own period of schooling were texts to be read from beginning to end, contemporary textbooks are collections of resource materials to be used in relation to specific tasks. Their emphasis is less on reading than on doing.

### The Change in the Landscape of Communication

The last two decades have seen a far-reaching change in media and in modes of communication. On the one hand this change has attracted widespread

comment and yet, on the other, it has not been fully acknowledged or understood. A comparison of texts from any of the major media across the last 30 years or so clearly reveals the differences. In newspapers, the pages of the 1960s are black and white, and covered in print; in the 1990s by contrast there is color, there are images; and in many contemporary newspapers in 'the west' print has very nearly been pushed off the page. If we look at television of the 1960s, at a news program let us say, the screen is dominated by the figure of the newsreader: usually in a medium shot, showing the person from about chest up. It is noteworthy that then, and to some extent even now in Great Britain, the term in use was 'newsreader': the news was a linguistic event by and large, even on television. Now of course the term presenter is coming to be used: the news still has verbal (written-to-be-spoken) elements, but the task of the 'mediator' has shifted from 'reading' much more to that of 'presentation'.

What is presented in TV news is information predominantly in the form of images, though the film and video footage which make up so much of the television news do have sound as an important element. But now speech is used to do the "presenting"; it frames and points to the central elements of information, which are visually mediated. There is a similar shift in terminology as far as newspapers are concerned in the word 'correspondent'—as in 'our foreign correspondent', as someone who wrote to the paper. The landscape of communication of the 1990s is an irrefutably multi-semiotic one; and the visual mode in particular has already taken a central position in many regions of this landscape. Other modes are also becoming more significant than they have been in the more recent past. Sound, as I mentioned, whether in the form of "sound-track", or "music", or "background-noise", is one of these. And the body is coming to be used as a medium of representation and communication: even a brief look at a contemporary rock video will illustrate this clearly enough, and so do the 'industries' of aerobics, jogging, roller-blading, and the televisual entertainments developed out of these.

These changes are not in themselves new: the body has been used in many cultures and in many periods as a medium of communication; the visual has had a central place in other periods, even in 'the West'. The point is rather this: that after a period of some two-to-three hundred years of the dominance of writing as the means of communication and representation, there is now, yet again, a deep shift taking place in this system, and in the valuation of elements of this system. The change is of great significance in its social and political ramifications. To call it a 'tectonic shift' may not be an exaggeration because the semiotic landscape is indeed being remade. Where before there was the single, central mountain-range of written language, now another alpine system is being thrust up by forces of a complex kind: in part, social, political, technological, and, as yet less recognized, by economic forces as well.

I will say something about the newer relations of language and image; about changes to writing which may be a consequence of this; and about a new theory of meaning, which is, I believe, essential in the light of these developments. I will

say very little about causes, though some few comments about the interrelation of technological change and the possibilities which it affords are essential. I will conclude with some programmatic statements from the point of view of a wider conception of curriculum: a broad, social, economic, cultural curriculum of representation and communication, active in many social sites and not just in institutional education.

### Language and Image

Even though writing has been the most valued means of communication over the last few centuries—the means which has regulated access to social power in western societies—other means have of course always existed together with writing. Even the densely printed page of novels, or of older textbooks, as of governmental reports, had layout, used typefaces of a certain kind, had paragraphing, all of them visual elements. The fact that the layout of the book adhered strictly to the observance of regular margins around the text, therefore displaying writing as a block of print, both obscured this fact of laying-out by making it invisible through its usualness, its “naturalness,” and at the same time intensified the meaning of regulation, much as did the stiff collar worn by the military and the white-collar worker alike. Of course, speech has always been there—except for the members of speech-impaired communities—and it has always accompanied all other modes.

Communication has always been multi-semiotic. What is happening at the moment is not in itself new; and yet it is a significant change. The cultural and political dominance of writing over the last few centuries had led to an unquestionable acceptance of that as being the case; it made the always existing facts of multi-modality invisible. The recent powerful re-emergence of the visual has, then, to be understood in that context: not as new in itself, but as new in the light of the recent history of representation, and of a nearly unshakeable commonsense which had developed around that. As a mildly critical note one might comment that the sustained attacks on this “logocentrism” from post-structuralist quarters have used written language in its most formal mode, without much evidence of self-consciousness or irony.

My focus from here on will not be on language-as-such (a theoretical fiction in any case), but on language in its written form, and on actual changes in its new relation with the visual. A simple means of illustrating the shift from the previous situation to the present one is to compare the front-pages of newspapers—either of one contemporary newspaper with a copy from, say, twenty/thirty years ago; or, to compare one of the few remaining papers which adhere to the older mode and one which exemplifies the contemporary situation. Figures 1 and 2 are an instance of the second.

The metaphor of ‘writing being pushed to the margin’ can be seen, literally, to be the case in figure 2. That is characteristic of many forms of public communication—whether publicity materials, brochures, advertising texts, and so on. Here I will explore a different instance of this changed relation,

Figure 1
Frankfurter Allgemeine

Frankfurter Allgemeine

ZEITUNG FÜR DEUTSCHLAND

2.00 DM D 2964

14. Dezember 1989, Nr. 2963/3

Telegraphen von Jürgen Jander, Ulrike Müller, Topp, Günther Neuenhäger, Jürgen Jander, Frank Schürmann

200 Menschen in Peru als Geiseln
in der Hand von Guerrilleros

Überfall auf die japanische Botschaft / Verschiebung der Rote Armee / Kibaki betet Hoffen an

14. Dezember 1989 (AP) Die Geiseln der japanischen Botschaft in Lima haben sich der Entführung durch Geiseln gefügt, wenn die peruanische Regierung ihre Forderungen nach Freilassung nicht erfüllt.

14. Dezember 1989 (AP) Die Rote Armee hat sich am Freitag in einem Gebiet im Norden Perus von der Kontrolle der Regierung befreit.

Zwei Jägerinnen

Bei. Das haben bisher sechs einmal phantastischen Mägen erwidert. Die Waidhaken im Tarnungsgewand auf die Jägerin. Die Jägerin verlor die Geduld. Sie ließ sich von den Jägern in die Falle locken. Sie war weg von der Einbildung. Sie war weg von der Einbildung. Sie war weg von der Einbildung.

14. Dezember 1989 (AP) Die Jägerinnen haben sich am Freitag in einem Gebiet im Norden Perus von der Kontrolle der Regierung befreit.

14. Dezember 1989 (AP) Die Rote Armee hat sich am Freitag in einem Gebiet im Norden Perus von der Kontrolle der Regierung befreit.

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„Netanjah verhindert Klärung des Schicksals von Ron Arad“

Schuldhafter Ich gebe die Hoffnung nicht auf / Vorwürfe aus Teheran / Der Schicksal bei den Syrern?

14. Dezember 1989 (AP) Die Rote Armee hat sich am Freitag in einem Gebiet im Norden Perus von der Kontrolle der Regierung befreit.

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Parteilandschaft 68

Von Friedrich Karl Prosser

Die Bilanzgerichte sind der ehemalige FDP. Also Lenz. Die FDP ist ein unruhiges Lager gegenüber dem SED-Regime. Die FDP ist ein unruhiges Lager gegenüber dem SED-Regime.

14. Dezember 1989 (AP) Die Rote Armee hat sich am Freitag in einem Gebiet im Norden Perus von der Kontrolle der Regierung befreit.

Figure 2
National Examiner

Advertisement for National Examiner magazine featuring 'KATIE COURIC SAVES MATT'S WEDDING', 'ON-THE-JOB HOROSCOPE IS YOUR BOSS A JERK?', 'Michael J. Fox cheats death in car crash!', 'MONICA X-RATED DIARY', and 'Newhart's Mary Frann: Heartbreak she took to her grave'.

Figure 3  
1936 Science Textbook

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## MAGNETISM AND ELECTRICITY

the magnetic poles. Fig. 62(c) shows the combined field of (a) and (b) when the wire is placed between the poles.

Note that, in Fig. 62(a) and (b), the lines of force on the left of the wire are in the same direction as those of the external field, while those on the right of the wire are in the opposite direction. Consequently in the combined field of Fig. 62(c) the field to the left of the wire is strong—there are a large number of lines, while the field to the right is weak.

If we assume, with Faraday, that the lines of force are in tension and trying to shorten (see p. 18), we should expect the wire to be urged to the right. This is precisely what we find by experiment.

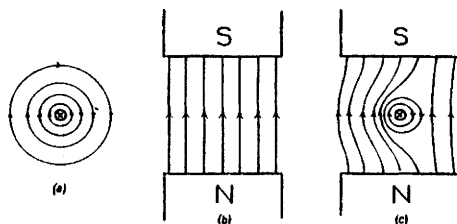


Fig. 62. (a) Magnetic field due to current in straight wire. (b) Field due to magnetic poles. (c) Combined field of (a) and (b).

*The principle of the electric motor.*

The simple electric motor consists of a coil pivoted between the poles of a permanent magnet (see Fig. 63). When a current is passed through the coil in the direction indicated in the figure we can show, by applying Fleming's left-hand rule, that the left-hand side of the coil will tend to move down and the right-hand side to move up. (Remember that the direction of the field due to the permanent magnet is from the N. to the S. pole.) Thus the coil will rotate in a counter-clockwise direction to a vertical position.

which I want to characterize, among other things, as 'specialization'. My hypothesis is that in the newer visual-verbal texts the two modes take on specialized tasks, each task being more appropriate to the inherent characteristics of the visual and the written mode. My example consists of two science textbook pages: one from 1936, and one from 1988. Both are aimed at students of about 14 years of age.

In figure 3 language as writing is dominant. In terms of space on the page, the image here takes a little more than one third of the page; most of the pages in this book are more usually given over wholly to print, or use smaller illustrations. Writing is the vehicle for providing all the information which is judged to be relevant. Language (in the written form) is considered as a full medium of representation and communication: everything that needs to be said is said in language; conversely, the implicit assumption is that everything that can be said can only be said in language. The syntax is that which we might even now associate with scientific writing (or with "formal" writing in

any context). Its central unit is that of the (complex) sentence. The structure of the sentences here is itself indicative of the deeper logic of this form of writing. Take as an example the following:

When a current is passed through the coil in the direction indicated in the figure, we can show, by applying Fleming’s left-hand rule, that the left hand side of the coil will tend to move down and the right hand side to move up.

This sentence consists of between six and eight clauses (depending on your mode of parsing and its theory of syntax); 1) a current is passed (by someone) through the coil; 2) the direction is indicated (by someone); 3) we can show; 4) (someone) applies Fleming’s left-hand rule; 5) the left-hand side tends 6) to move down; 7) the right-hand side tends 8) to move up. The clauses are in an hierarchical arrangement in which the position of the clause in the hierarchy is an indication of its ontological, representational and communicational significance. Here “we can show” is the main clause, so that what is at issue in the first instance is the (generic) scientist (“we”) as demonstrator of truth. The clause “by applying Fleming’s left-hand rule” is directly subordinate to the main clause syntactically and conceptually: it is the means by which “we can show.” The two clauses which contain the substance of the demonstration “the left hand side. . . the right-hand side” are also subordinated syntactically and conceptually to the main clause though “by applying Fleming’s” has as its deleted agent the “we” of “we can show.” Its immediate proximity to the main clause mimetically indicates the closer connection. Hierarchical syntax serves the expression of the hierarchy of conceptual organization.

The use of agentless passives (“when a current is passed”, “the direction indicated”) puts into the background, to the point of disappearance, the figure and the action of the scientist/technician. This de-personalization is also present in the “we”, which subsumes the writer’s persona to the collective “we.” Another meaning of this kind is shown by the “will tend”—the careful nuance and hedging of the experimenter/scientist, who is dealing, after all, with nature. But the major meaning in this textual example is that carried, more or less, by the words and their syntactic arrangement—what will happen to a coil when a current is applied in a particular way. The emphasis on place and space, “the direction indicated in the figure”, “we can show”, “left-hand side”, “down”, etc, show that spatial, locative meanings, are here expressed through language; on the face of it, they could be more easily shown visually. But here language is the means for carrying all information.

When language has the role, as here, of expressing all the essential information, images (are assumed to) have the function of ‘illustration’. Some meaning is expressed fully by written language, and the image is assumed to be repeating that information. Nothing new is assumed to be added which is independent of or not subordinate to the written part of the message. There is one direct link here between written text and visual illustration; in the clause “in the direction indicated in the figure.” Language is used to point. Clearly it is



easier in this instance to make use of the spatial potentials of the image; which is the point I made just above about the continuity of the multi-semiotic landscape. The means for doing so existed then, in 1936, and could be used. The question arises as to what the function of images actually is in this context. In other words is this really an illustration, or just what is ‘illustration’? (see Barthes 1976) The author of this textbook was praised by reviewers of the book for his “enlivening use” of images. This points in the direction of pleasure; and through pleasure perhaps to an increased possibility for learning and remembering. But beyond that lies even here, even if implicitly, an assumption that certain forms of information may be better represented and communicated by visual rather than by verbal means.

The page from the textbook of the 1980s (figure 4) functions very differently. Here writing is not dominant. In terms of the amount of space taken up by language and image on the page the proportions are now reversed—about one third is writing, two thirds is given over to image—though that alone is not the major indicator of the changed relation. Rather it is the fact that now writing is not the vehicle for conveying all the information which is judged to be relevant. Here language is implicitly seen as a medium which is only in part able to express and represent what needs to be represented. Everything that needs to be communicated is now not judged to be communicable in the written mode alone; the assumption is that some things are best done by using writing, and others are best done by using images. The two modes have become specialized to particular tasks.

The syntax is fundamentally different from that of the earlier text: both formally and in its content and function. Take as an example the first paragraph:

#### Circuits

In your first circuits you used torch bulbs joined with wires. Modern electrical equipment uses the same basic ideas. But if you look inside a computer there are not many wires or torch bulbs. The wires and bulbs have been replaced by electronic devices like transistors, chips and light-emitting diodes.

Here the sentences are not only shorter, they are syntactically simpler. Sentence 1 consists of two clauses; sentence 2 of one clause; sentence 3 of two clauses; sentence 4 (the longest) consists of one clause.

In fact this much simpler syntax is also much closer to the grammatical/textual organization of (informal) spoken language (see Halliday 1989; Kress 1994). This gives another clue to causes for the changed relation: the informality of spoken language brings with it a suggestion of a less formal social relation. The relation of the maker of the text to the audience has changed, (secondary school education had become, well before the 1980s, a mass-commodity, whereas that was not so in the 1930s), and in part because there have, in the fifty years between the two examples, been far-reaching social changes which have deeply altered relations of power. Gender is no doubt imbricated in this: the author of the late 1930s book could declare in his Preface that his

Figure 4  
1988 Science Textbook

## 12.9 Electronics

### Circuits

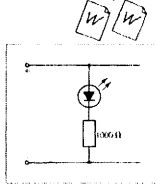
In your first circuits you used torch bulbs joined with wires. Modern electrical equipment uses the same basic ideas. But if you look inside a computer there are not many wires or torch bulbs. The wires and bulbs have been replaced by electronic devices like transistors, chips and light-emitting diodes.

Transistors and chips are examples of *semi-conductors*. They are made from special crystals like silicon. Transistors work because they only conduct electricity in the right conditions. They are useful because they can turn on and off very fast, and they need very little electricity.

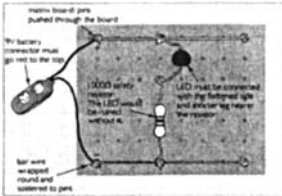
#### An electronic light

- You can make electronic circuits with wires like the circuits you made before. The difficulty is that the contacts are poor, and sometimes things do not work. It is far better to *solder* the components

Here is a simple circuit to operate a light-emitting diode (LED).



This design shows the same circuit soldered on matrix board. The board is cheap and can be re-used.

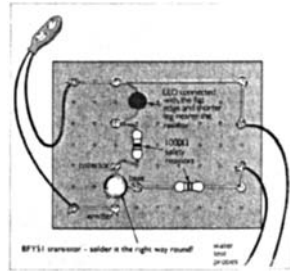
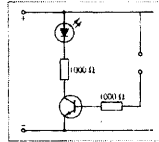


### Transistors



A transistor is a special *semi-conductor*. It has three connections: a base, a collector and an emitter. When a small current is put on the base, it lets a much larger current flow between the collector and the emitter. So a tiny current can control a much larger one.

- Try this water-detector circuit.



When the probes touch something wet, a very small current goes from the battery through the water to the base of the transistor. This current is big enough to make the transistor work, so the LED lights up.

book would be “easy to read for the boy.” The authors of the 1980s book have no doubt made strenuous efforts to make their books appealing to student of both genders: professionals concerned with science have been very conscious of the absence of young women from this subject.

Whereas the logic and order of hierarchy typifies the writing (the sentence) of the 1930s text, now there is the logic and order of sequence, often a sequence of events: First you did this, then you did that, then (if) you do that . . . The new formal arrangement expresses a change in the ontology/epistemology of the (presentation of the) subject (see Halliday 1989; Kress 1994). Along with this, the language is more informal, more personal, more (reader-) friendly. The reader is addressed directly, personally, as “you”; agentless passives are fewer; the hedging has lessened. And whereas in the first sample the major meaning was carried by language alone (or that at least was the ostensible assumption), now

it might be said that the major meaning, the core meaning, is carried by the images. Take as an example the relation between the writing and the image under the heading *An Electronic Circuit*. The writing says: "Here is a simple circuit"; but it is the image which provides the information of what a circuit is like. The image carries the main information.

This is not the relation of illustration, where the written text is assumed to carry all the information, so that the image merely 'repeats' that information, for whatever reason. Now both writing and image are informative. However, they are not informative in the same way or about the same things. A specialization has occurred, which it is essential to note. Language has—here at least—the functions of narrating (you did this, then you did that, (if) you do that), of pointing ("Here is a simple circuit"); and still, of describing/classifying ("Transistors are examples", "they are made from", "they are useful"). But perhaps the central aspects of information—what a circuit is like, how it works, what its components are—are now communicated by an image. Writing is oriented towards action and event, broadly; and the visual is oriented towards the display of elements and their relations.

This example seems to show an instance of a new code of writing-and-image, in which information is carried differentially by the two modes. Information which displays what the world is like is carried by the image; information which orients the reader in relation to that information is carried by language. The functional load of each mode is different.

The simpler syntax does not mean that the text—the verbal and visual elements together—is less complex than the 1936 example. The diagrams have taken over certain of the functions carried in the earlier text by language. The diagram just discussed is a highly abstract representation of a circuit; it is a topological representation, which focuses on relations abstractly rather than 'realistically'. In other words, abstraction and generalization are not absent from this page, and the cognitive demand made of the reader/viewer is as great (though different in character) as in abstractions made in verbal language. Equally, the communicational and representational power of the diagram is such as to cope easily with that demand. If we follow a top to bottom reading direction the abstract, topological diagram is followed by a realist representation, a topographical diagram. It is realistic and specific enough to enable someone to produce an actual circuit from this model. This is then followed by two abstract diagrams; and the page concludes with a further realist, topographical representation. Reading the page demands from the reader a constant switching from abstract to realist forms of representation. This new representational and communicational situation is not one of lesser complexity, or of lesser cognitive demand: it is one of a different kind of complexity, and of different cognitive demand.

The order in which the elements in this verbal and visual text are read is significant: as far as the diagrams alone are concerned, if we follow the conventional reading direction of the printed page, (left to right, from top down to bottom)

then the abstract, generalized representation precedes the realist, specific one. In other words, as a pedagogic strategy, in one form of reading the text offers the abstract version first and follows that with the specific. However, this page can also be 'read' as a visual unit, that is, as a 'picture'. In that case a different relational order obtains, one in which the realist images occupy the lower part of the page/image, and the abstract images occupy the upper part of the page/image. That leads to a different reading—of empirical reality as both the anchoring and the grounding of the abstract, theoretical. (see Kress and van Leeuwen 1996). I make this point because it might be thought that visual representations do not lend themselves to abstract thinking, or to teaching practices which move from the abstract to the concrete or vice-versa. That is not the case.

For the age of print, in the period of the high valuation of writing, the book may be thought to be the criterial, the defining medium of dissemination. The book with its densely printed pages is the particular achievement of the era of print-literacy; and the book also stood in specific relation with conceptions of knowledge. Whether as novel or as scientific treatise, the book presents an integral, coherent account of a world. It does not matter from that point of view, whether that world is factive or fictive. In the book, authority and knowledge are inextricably intertwined: the book presents a coherent, cohesive, internally consistent account of (a part of) the world. The book was, in the last resort—other, beyond and above the author's name—the guarantor of knowledge. The contemporary science text-book is no longer a book in that sense at all; it functions as a packaged resource kit. The relevant element is no longer the book itself, nor its chapters. In the newer science textbook (as of those of geography, history,) the relevant element is the 'unit of work'. Whereas the old-fashioned book was read from beginning to end, this new book is not read at all, it is used. The shift is from an older organization of text to a newer organization of resource; from an older concern with knowledge to a newer concern with the marshalling of information for the management of a task, related to, work. The book now makes available resources. It is not read but used: the "work" in 'unit of work' has to be taken seriously; it signals the deep shift from the inwardly focused, contemplative activity of 'reading', to outwardly focused action, both physical and cognitive.

In this, the newer book is in line with other organizations of semiotic materials in which the boundaries of the 'text' are dissolving, and reading and use become both blurred and fused.

### Is Language Changing?

One of the new buzzwords in information technology circles is "visualization," (see Brown et al. 1995; Lanham 1994; Tufte 1990). This names the trend towards the visual representation of information which was formerly coded solely in language. With the increasing availability of "bandwidth," visualization is now a possibility, and will become more so in the near future. "Visualization" in this sense proposes one answer to the question whether lan-

guage and image are “doing the same thing”: it says, yes, they are; it is merely a matter of translating between the two modes. Just as it is possible, so the argument goes, to translate from one language to the next, so it is possible to translate from one semiotic mode to another. Of course this bald formulation leaves out of account why anyone would want to engage in this translation if both modes convey “the same” information, in the same way, with the same effects. If, as I have suggested, the visual and the verbal provide fundamentally distinct possibilities for engagement with the world then the translation from one mode to another has to be seen in the more radical sense of “translation as transformation.” In such transformations, the figure of the translator, as a socially formed and located person with his or her own interest, has as always to be taken into account. But that apart, the “affordances”—what any semiotic system makes possible or rules out—are the starting point for any serious attempt to understand this process of translation/transformation. Are language and image doing the same? Can they ever do the same? must be the early questions, rather than left as unproblematic.

A second set of questions concerns the interaction/interrelation of any two languages or semiotic modes between which translation takes place. Do they merely co-exist? Or do they interact? To what degree do they interact? If language and image do not merely co-exist, but interact, what are the consequences? If they have different potentials, will they come to serve different functions, and will they then inevitably become specialized, both representationally and communicationaly? There is a third set of questions which I will not engage with here, namely: is the visual as a mode of representation systematic, rule-governed, an effect of the values of the culture in which it is used? I will simply assert that it is, and that the patently obvious cultural differences in visual forms and in their modes of use point precisely in that direction. (See Kress and van Leeuwen 1996)

To answer the first set of questions requires a departure from usual ways of thinking about and theorizing language, that is, it requires a focus on the material and formal aspects of language in ways which are not a part of the theoretical mainstream. Within that, language has been treated in a quite abstracted way, as an “immaterial” phenomenon—in conceptions such as Saussure’s “langue,” Chomsky’s “competence” (see Chomsky 1965), and the many transmogrifications of that term; and indeed in much discussion whether in linguistics or in psychology. But to understand the semiotic potentials of language, we need to engage with it as material, and as substance, whether as speech—in its physicality and materiality as sound, as well as in its more abstract grammatical/syntactic/textual organization; or as writing—in its physicality and materiality as graphic (and visual) substance, as well as in its more abstract grammatical/syntactic/textual organization.

Of course, in certain linguistic and literary approaches to language such aspects have always been included: the study of poetry has dealt in detail with aspects such as pace, rhythm, sound-shapes, whether used in rhyme, asso-

nance, alliteration, or in phonaesthetic considerations. Similarly, with certain forms of poetry—and advertising!—in written/printed form. In linguistics—in phonetics as well as in some grammatical theories, certain suprasegmental features have had much attention (e.g., Firth 1957 ; Crystal and Quirk 1964; Halliday 1989). Nevertheless, these concerns have not entered the mainstream of linguistic theorizing, but have always appeared on the margin, in stylistics perhaps, or in certain forms of applied linguistics, often even more marginally as paralinguistic, or extralinguistic, concerns. They have not led to a radical revision of notions of language.

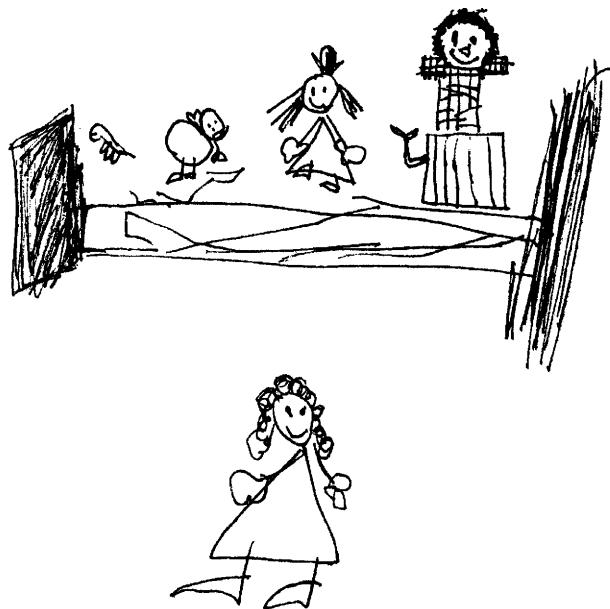
At the point where language is used in a radically new medium—in electronically mediated communication—the issue of what language is needs the most serious rethinking.

From a more radically material point of view, language has to be thought about as either speech or writing, and each of these has then to be further described in terms of its multiple material aspects. Writing, for instance, is not only distinctive in terms of its characteristic syntax but also in material terms such as its multiple forms of visual display, on multiple forms of surface. From this perspective speech and writing are deeply different. Speech is necessarily a temporally, sequentially organized mode, using the medium of air and the mode of sound, depending on sets of physiological characteristics of the so-called speech-organs, and the organs of hearing. Its temporality and sequentiality leads to an underlying logic of sequence in time: the logic of the iteration of one thing after another. This logic lends itself readily to the representation of (sequentially conceived) events in the world—sequences of actions, sequences of events. These can readily be turned into the textual form of narrative. Speech is oriented to action and event. The implicit and foundational question posed by the organization of speech is what are the salient events, and in what sequence do they occur?

The visual by contrast is a spatially and simultaneously organized mode, using the medium of light, and the materiality of certain kinds of surfaces, in the mode of graphic substance. It too relies on physiological, bodily characteristics. Its spatiality and simultaneity leads to a different underlying logic, namely the logic of simultaneous presence of a number of elements and their (spatial) relation. This logic can, of course, be turned into sequences of images following another; but its inherent characteristics are those of display: showing what the salient elements in the world are and what the spatial relations between them. Display and arrangement are the fundamental features of the logic of the visual. The implicit and foundational question posed by the organisation of a visual representation is: what are the salient elements, and in what spatial relation do they stand to each other.

Of course aspects of sequentiality—such as anteriority and posteriority, before and after, can be used metaphorically to signal other meanings: “before” can become “cause,” and “after” can become “result”; or, “first in the sequence” can become “most important”. Similarly, spatial relations can be used in

Figure 5  
*My Visit to the Toy Museum*



metaphors of various kinds: “above” can become “more important”; “next to” can become “closely related”; and so on. The technology of film and video sequentializes and temporalizes visual images. But their initial logic remains, and their metaphoric developments are just that: developments of a particular orientation towards and engagement with the world. Here, as an illustration, is a child’s recollection through the visual mode of an event, a school-outing to a toy museum.

Interestingly, the teacher’s demand had been “to draw a story”, mixing the categories of “narrative” and “display” in her request. The child’s drawing is a recollection; a reordering, and a reconstitution of a complex event, (taking place during a visit of about one and a half hours): a representation of salient elements in a particular order. It is not a drawing of a particular shelf or display-case in the museum: it is a mental remaking, and a visual representation of that internal remaking. It shows salient elements; in a particular arrangement—in a line, suggesting similarity; and ordered by size, suggesting difference; and in a particular relation to the maker of this representation. It needs to be stressed that this is a cognitive act of reshaping an event that happened, from one point of view, out of the interest of this maker of the representation. Images are ideological constructs, just as much as are verbal textual objects.

Had the teacher requested a written story, or a spoken account of the visit, the resulting semiotic object would have been entirely different: not the classification of elements as here, but the recounting of events in sequence: ‘first we did this, then we did that, then Lucy lost her bag, then we saw the dolls house’, etc etc. In other words, the inherently distinct possibilities of speech and of the visual would have led to different cognitive action, to different representations, to the construction of a different world, with a different order. As we face the new era of the world mediated everywhere on the visual space of the screen, this is a fact of fundamental importance. The shift from page to screen is having its effects on the modes of communication—writing and the visual—as much as it is having effects on the media, such as book, page, and screen.

Speech-based cultures, oriented to the world through the deep logic of speech, are thus likely to be distinctly different from image-based cultures: their engagement with the world is different, their habitual modes of representing the order of that world are different; and these differences become, over time, normal and then ‘natural’. Writing-based cultures are similarly likely to feel the effects of the shift from representation through language in written form to representation in visual form.

The logic of writing participates in the logic of the visual (writing is a visual mode) and in the logic of speech (writing, even in highly literate societies still stands in a complex dynamic and close interrelation with speech). As I pointed out earlier, hierarchy—a metaphoric spatiality with ‘higher’ and ‘lower’ expressed via the syntactic means of embedding as well as of other forms of subordination—is a feature of many forms of writing in the public domain. In addition, there is the actual spatiality of the graphic material of the surface on which writing is displayed. Not only does this permit, as has been pointed out frequently, a going back over written text, a visual reassembly, it also affords other possibilities of the visual through the multiplicity of means of layout: paragraphing; spacing of lines and of letters; indenting; the use of ‘bullet points’; size and shape of letters; and so on. The syntactic hierarchy of clauses can in this way be further amplified, underscored, or counteracted through directly visual means. Writing is thus doubly spatial: once metaphorical, through the order of syntactic hierarchy, and once actual, through the visual display on a surface.

In pages such as those discussed earlier (figure 4), blocks of writing come close to becoming one element in the set of elements of the now visual rather than verbal unit of the page. In contemporary usages pages differ in the extent to which they are either ‘written text’ as such, or a ‘block of text’, a visual element in a visual unit. As I mentioned earlier, language in its written form is becoming specialized, as in the instance of figure 4, which is not at all an unusual example. In this new specialization, written language tends syntactically in the direction of speech, and tends semantically in the direction of the inherent logic of speech—the reporting/recording of actions and events, and of the use of language in issuing commands, i.e., actions to be undertaken.



These often have a deictic function in relation to the images: look at this, copy this drawing, follow this line, etc. In this new specialization written language is getting closer to speech-like forms than to what are still considered (formal) writing-like forms.

Images are, on pages such as that of figure 4, taking on certain functions formerly carried by language. Again, these functions tend in the direction of the inherent logic of spatial display: showing the salient elements, and their relations. Whereas, in the former situation, all these tasks were performed by writing, now a separation is evident: the functional load of the two modes is becoming distinct. And so the answers to my earlier questions are: No, the two modes are not doing the same; and no, they are not merely co-existing; and yes, there is, it seems, strong interaction between the two which could, over time, have real effects on language in the written mode.

Both modes produce semiotic objects—messages, textual forms. If texts are metaphors of the organization of the world, then the two modes produce quite distinctly different takes on the world, different images of that world, and different dispositions by their users—whether as text-producers or as text-consumers—towards the world. The shift which I have described here is one which could be characterized, in perhaps oversimplified form, as a move from narrative to display (to use two foundational categories to name the essence of that shift). Narrative and display as ways of organizing representations of the world each have the most fundamental consequences for an individual's or a culture's orientation in the world, so that this shift is bound to have equally fundamental repercussions in social, cultural and economic practices, and in the subjectivities of individuals. This is a story which is still in the process of being told, and a display still in the process of being sketched.

From the point of view of the focus of this book, the issue I have been discussing connects directly: the 'screen' is the new space of representation. How it will be organized—whether as a largely visual entity or as a largely linguistic entity will have far-reaching repercussions. It is too early to know, though my money is on the visual. In either case, the effects on representation through writing will be far reaching, though deeply different in each case.

### New Theories of Representation

The semiotic changes which characterize the present and which are likely to characterize the near future cannot be adequately described and understood with presently existing linguistic theories. Most obviously, if language is no longer the central semiotic mode, then theories of language can at best offer explanations for a part of the communicational landscape only. Moreover, theories of language will not serve to explain the other semiotic modes, unless one assumes, counterfactually, that they are, in every significant way like language; nor will theories of language explain and describe the interrelations between the different modes, language included, which are characteristically used in the multi-modal semiotic objects—'texts'—of the contemporary period.

In other words, and as a first requirement, multimodal texts/messages need a theory which deals adequately with the processes of integration/composition of the various modes in these texts: both in production/making, and in consumption/reading. This, in turn, presupposes adequate understandings of the semiotic characteristics of the various modes which are brought together in multimodal compositions. At this level, a semiotic theory which is too much tied to and derived from one particular mode—for instance, our conventional language-based theories of communication and meaning—will permit neither an adequate nor an integrated description of multi-modal textual objects, nor of multi-media production. In other words, an adequate theory for contemporary multi-modal textual forms needs to be formulated so as to permit both the description of the specific characteristics of a particular mode, and of its more general semiotic properties which allow it to be related plausibly to other semiotic modes. Take as an instance the need for all semiotic modes to be able to express the meaning 'social distance'. This is done in specific ways in language, for instance through the use of the pronoun 'we' rather than the pronoun 'I', or through the use of the 'past tense' as in 'I wanted to ask you for a loan of your car' rather than the 'present tense' as in 'I want to ask you for a loan of your car'. This meaning is expressed in quite other ways, necessarily, in images: for instance by the distance of viewer from object—not close and friendly, but distant and formal; or by the vertical angle: 'looking up to an object or person of power' or 'looking down on a person or object of lesser power'. Both the relatedness of the means through which this is expressed (e.g., 'distance' in both cases: temporal distance in one case and spatial distance in the other), and the differences in expression between two given modes need to be readily describable in an adequate theory of meaning.

A second issue is that contemporary, and in particular mainstream, theories of semiosis are theories of use rather than of remaking and transformation. That is, individuals are seen as users, more or less competently, of an existing, stable, static system of elements and rules. This view has historic as well as contemporary social and political-ideological causes. One of these has, as an unacknowledged consequence, the widely entrenched commonsense about the arbitrary relation in the sign between signifier and signified. That relation is seen to be both established and sustained by convention. Yet all the examples which I have discussed here speak of change: changes in forms of text, in uses of language, in communication and representational potentials. Indeed change is the whole point of this chapter. But change and conventionality are not easy bedfellows: the common understanding is that convention impedes change, that convention is a force for the maintenance of stability. If change and convention are not to be treated as mutually exclusive terms, then the question still remains, forcefully, how we are to account for change.

My argument is that the semiotic landscape is changing in fundamental ways, and that this change relates to others in social, cultural, economic and technological domains. While a semiotic theory which could not easily

account for change was never adequate to the facts of semiosis, it may have been sustainable in periods where change was less intense than it is at the moment. A semiotic theory which does not have an account of change at its core is both simply inadequate and implausible in the present period.

Dominant theories of semiosis—in linguistics by and large—are theories of use in which language is seen as a stable (and largely autonomous) system of elements, categories, and rules of combination. All the examples in this chapter demonstrate changes in the use, extension, and function of both the categories and the rules. In other words, they show a quite different situation to that portrayed—largely implicitly—in current theory. The other point demonstrated by the examples is equally important: the changes in use, form and system arise as a result of the interested actions of individuals. It is the need by individual makers of texts which leads them to stretch, change, adapt, modify the elements, and thereby the whole set of representational resources with its internal relations.

An adequate theory of semiosis will be founded on a recognition of the “interested action” of socially located, culturally and historically formed individuals, as the remakers, the transformers, and the re-shapers of the representational resources available to them. Notions of language use—that is, deployment of existing resources without changing them—will need to be replaced by notions of the constant re-making of the resources in the process of their use, in action and in interaction. The remaking of the resources is an effect both of the demands of particular occasions of interaction, and of the social and cultural characteristics of the individual maker of signs. Both together account for the sign-maker’s interest in representing a phenomenon in a particular way, and in communicating it in certain media. This interest is personal, affective and social and it shapes the ‘direction’ of the remaking of the resources. In this way the remaking on the one hand reflects individual interest, and on the other, due to the social history and the present social location of the individual also reflects broad socio-cultural trends. Semiotic change is thus shaped and guided by the characteristics of broad social factors, which are individually inflected and shaped.

The interested action of those engaged in semiosis is the crucial matter in attempts to get beyond a theory of use. It defines one central aspect of the process of semiosis: the sign is the expression of the maker’s interest through the motivated expression in apt form of the meaning of the sign-maker. This action is transformative rather than totally creative: that is, it is action on and with existing semiotic (cultural) resources. The more the sign-maker is in the culture, the more he or she is ‘socialized,’ the more the shapedness of the social and cultural resources will be in the foreground; but the transformative, re-shaping action is always seemingly present, however invisible.

With this approach use is replaced by transformation and remaking. In present semiotic (-linguistic) theories, the action of the individual is use, the implementation of an existing system; in a semiotic (-linguistic) theory of

transformation and remaking, the action of the individual is that of the changing of the resources: using existing resources in the guiding frame of the maker’s interest. If competence in the use of the possibilities of an existing stable system is the goal of present theories, the capacity of design through the (re)shaping of the potentials of existing resources is the goal of the latter. The two approaches assume very different notions of individual action and of individual responsibility. Consequently the two approaches have deeply differing potentials and implications for applied areas—whether in language use and language learning, or in education more generally. I will return to this in the final section of the chapter.

Semiotic systems, language included, are then seen as sets of resources, which are given their regularities by larger cultural values and social contingencies, and deployed and remade innovatively in the making of always novel signs by individuals in social interactions. Use is replaced by remaking, which is transformation; and the notion of the semiotic system is now replaced by that of a dynamic, constantly remade and re-organized set of semiotic resources.

The focus on language alone has meant a neglect, an overlooking, even suppression of the potentials of representational and communicational modes in particular cultures; an often repressive and always systematic neglect of human potentials in many of these areas; and a neglect equally, as a consequence, of the development of theoretical understandings of such modes. Semiotic modes have different potentials, so that they afford different kinds of possibilities of human expression and engagement with the world, and through this differential engagement with the world, make possible differential possibilities of development: bodily, cognitively, affectively. Or, to put it provocatively: the single, exclusive and intensive focus on written language has dampened the full development of all kinds of human potentials, through all the sensorial possibilities of human bodies, in all kinds of respects, cognitively and affectively, in two and three dimensional representation.

Just at the point where ‘literacy’—socially made forms of representing and communicating—is undergoing radical changes in the context of the deeply revolutionary effects of the ‘Electronic Age’, it is essential to ask this question about the adequacy of present theories of semiosis and their effects. The fast developing technologies of virtuality are promising and threatening a new and more intense distancing—a new alienation of ourselves from our bodies. This demands the most serious rethinking at this point. If we do not take this opportunity, we deny ourselves not only the possibility of actively participating in the shaping of this ‘age’, but we may unwittingly collude in a new diminution of the potentials of being human.

### Synaesthesia

This newer theory of representation may prove adequate to the demands of several urgent tasks posed by the electronic technologies: the needs for dealing with constant change; the need to treat individuals as agentive in relation not

only to the production of their textual objects, but also in relation to their constant re-making of their community's representational resources; the interaction of many semiotic modes in a text; and to do so both from the maker's and the reader's point of view. The interaction of different modes and of different possibilities of expression in multi-modal texts and multi-media production poses questions not only at the level of text, but also at the level of cognitive processing: new demands are made cognitively (and no doubt affectively) by the new technologies and by their textual forms. A new theory of semiosis will need to acknowledge and account for the processes of synaesthesia, the transduction of meaning from one semiotic mode in meaning to another semiotic mode, an activity constantly performed by the brain. In other words, a theory of semiosis which incorporates the facts of multimodality also needs to be a theory in which synaesthesia is seen as an entirely usual and productive process, essential equally for the understanding of semiosis in a multimodal semiotic landscape as for the possibilities of real innovation, rather than as too often now seen as a pathology to be remedied.

In the most immediate past, as in our present, synaesthetic activity has been suppressed in institutionalized education, due to the social and cultural dominance of language in the written mode in the public domain. Culture affects and even structures, through privileged and thereby habituated usages, which semiotic modes are available or not, which are made focal and valued, made useable or not, and which are ruled out of or into the public landscape of communication. Social and cultural forces thus determine which modes are 'there' for humans to use in particular domains; they affect the manner in which they are used. The school, in Western societies, says that writing is serious and most highly valued; music is for the aesthetic development of the individual, as is visual art. These structures, pressures, and actions have not only shaped the representational landscape, but also the cognitive and affective potentials of individuals. A more developed understanding of these processes is essential to open up full and productive access to the multiplicity of representational and communicational potentials, which will be essential for competent practice in the electronic age, in the socialities and economies of the near future. At the moment our theories of meaning (hence our dominant theories of cognition) are entirely shaped by and derived from theories of language. Meaning is in fact identified with 'meaning in language' this constitutes a major impediment to an understanding of the semiotic potentials of, among other modes, the visual and of its role in cognition, representation, and communication.

*From Critique to Design: The New Curricula of Communication.*

In a theory of use the task of the individual is to understand and have competent control of the representational system and its capacities. Although the potentials of the system make possible a vast—even infinite—range of textual forms, their scope remains relatively circumscribed by convention: hence the valuation of 'creativity' as 'rare' in such a theory. In that theory, change, other

than as that rare event of creativity, is produced via critique: that is, existing forms, and the social relations of which they are manifestations, are subjected to a distanced, analytical scrutiny to reveal the rules of their constitution. It is now essential to offer a critique of critique, by showing it to be a response to particular circumstances in a particular period, showing it as a historical phenomenon and not as naturally there. In periods of relative social stability, critique has the function of introducing a dynamic into the system. In a situation of intense social change, the rules of constitution both of texts and of social arrangements are in crisis: they are not settled, but in process of change. In the new theory of representation, in the context of the multi-modal, multi-media modes of textual production in the era of electronic technologies, the task of text-makers is that of complex orchestration. Further, individuals are now seen as the remakers, transformers, of sets of representational resources—rather than as users of stable systems, in a situation where a multiplicity of representational modes are brought into textual compositions. All these circumstances call for a new goal in textual (and perhaps other) practice: not of critique, but of design. Design takes for granted competence in the use of resources, but beyond that it requires the orchestration and remaking of these resources in the service of frameworks and models expressive of the maker's intentions in shaping the social and cultural environment. (see Buchanan and Margolin 1995) While critique looks at the present through the means of past production, design shapes the future through deliberate deployment of representational resources in the designer's interest. Design is the essential textual principle for periods characterized by intense and far-reaching change.

Design rests on a chain of processes of which critique—as distanced analytic understanding—is one: it can, however, no longer be the focal one, or be the major goal of textual practices. Critique leaves the initial definition of the domain of analysis to the past, to the past production of those whose processes are to be subjected to critique. It leaves the definition of the agenda to those whose purposes are to be the subject of critique, and are not mine. The task of the critic is to perform analysis on an agenda of someone else's construction. As a result a considerable degree of inertia is built into this process. The idea of the intellectual as critic corresponds to social arrangements and distributions of power, rights and responsibilities of certain social arrangements and of certain historical periods: namely arrangements in which some individuals and groups set the agenda and others either follow or object. Design takes the results of past production as the resource for new shaping, and for remaking. Design sets aside past agendas, and treats them and their products as resources in setting an agenda of future aims, and of assembling means and resources for implementing that. The social and political task and effect of the designer is fundamentally different from that of the critic.

It is here that I wish to make two brief points about curriculum. Curriculum is a design for the future (see Kress 1995). The contents and processes put forward in curriculum and in its associated pedagogy constitute the design for

future human dispositions. They provide one set of important means and resources for the individual's transformative, shaping action in making herself or himself as social humans. That is one point. The other is that the sites of education are now also in question, as are their aims. The state's threatened withdrawal from institutionalized education with its aim of producing citizens, in favor of the market with its aim of producing consumers, is one strand in that. In that shift, new (and also very ancient) sites of education are coming back into the foreground: the workplace prominently (as in the ancient guild system), and now also the multiplicity of modes of mediated communication. These are not only or no longer just the 'mass-media', but quite new media, as yet only hazily knowable in their effects—with the Internet of course the dominant metaphor at the moment—and their educational aims and effects. All these pose entirely new questions for 'curriculum'. In all of these, the category of design is foundational.

Critique and design imply deeply differing positions and possibilities for human social action; and deeply differing potentials for human subjectivities in social and economic life. The likely shape of the near future is such that the facilities of design rather than those of critique will be essential for equitable participation in social, economic and cultural life. It would be an unforgivable dereliction of the responsibilities of intellectuals if the potentials of representation and communication—of literacy in a very broad and metaphoric sense—offered by current developments were not fully explored, and a concerted attempt made to shape their direction to bring about at least some of the much talked about utopian visions of communication in the electronic age.