

Chapter 8: Access structures

In this chapter I shall discuss further some aspects of the relationship of the reader to the text that were introduced in Chapter 5. Although it has been argued that technologies of writing and printing constrain what may be said, it is also arguable that the relationship of medium and message works both ways. That is, technologies are themselves developed in response to the needs of users. While the invention of printing might have accelerated the Renaissance, it was also a response to it—most of the technology had been around for some time before the vital connection was made and the market for books warranted the considerable investment required.

Designing for different purposes

In Chapter 7 it was noted that the requirements of medieval scholarship (which was dominated by biblical scholarship) led to further developments in book design to accommodate glosses in a more ordered manner.¹⁷³

Gullick (1986: 207) suggests that

‘The work of assembling the authorities, comments, and of devising ever improved layouts to make the act of reading easy is one of the great monuments of medieval scholarship and page design’.

Even today the design of bibles can provide a good demonstration of the influence of users on formats, since the Bible is an example of a text whose

¹⁷³ Modern biblical scholarship is also surprisingly relevant to the present study. The fields of content analysis, hermeneutics and discourse analysis all have roots in the need to determine the authorship of scriptures and to suggest procedures for translation into new languages. In particular the Summer Institute of Linguistics, founded by the tagmemic linguist Kenneth Pike, is a missionary organization. One of its associates, Robert Longacre, a major figure in discourse studies, is centrally concerned with Bible translation.

wording, while it can be retranslated and glossed, cannot be changed in substance. As Table 8.1 demonstrates, a wide range of user needs are currently catered for. Bernhardt (1985) has also compared a range of texts that address the same topic but with different purposes (see Chapter 1). In his sample texts, though, everything about the text differs in response to the needs of the anticipated audience—scope, argument and language, as well as format and typography.

Edition	Purpose
Traditional leather-bound bible	Binding (limp leather, rounded corners, etc) protects against wear; double column is for legibility and to display verse structure. May have 'churchy' connotations.
Pocket-size bible	Requirements of legibility are subordinated to convenience of carriage.
Tiny white bible	To be presented or carried on special occasions; available in presentation boxes for different occasions (weddings, first communions, etc).
Paperback bible	Cheap enough to be given away by evangelists and the Bible Society.
Lectern bible	Convenience of carriage and storage subordinated to legibility and symbolic prominence.
<i>The Bible designed to be read as literature</i> (Heinemann 1937)	To be read in continuous fashion; design discourages the 'proof-text' style of reading.
Loose-leaf and wide margin versions	To encourage cross-referencing and writing of notes; used for sermon preparation.
'Red-letter' bible	Words of Christ highlighted for devotional reading and as an aid to rote learning.
Family bible	Archival function, with space for a record of births, deaths and marriages. May reflect a symbolic function in its large size
Computer disk bible	(For example, <i>The Word Processor</i>) include search facility to remove need for separate concordance.
Chain-reference bible	Designed specifically to encourage doctrinal study through linked proof-texts.
Parallel & polyglot bibles	Different languages or translations are printed on opposite pages, or alternate lines, for easy comparison.
Children's bible	Includes pictures and explanatory notes.

Table 8.1 The different forms in which the Bible is available reflect the range of uses anticipated by publishers.

The interplay between function and genre is clear from some of these examples—The Bible designed to read as literature especially, proclaims what it expects from its imagined reader by explicitly ‘quoting’ another genre (classic literature). Children’s bibles can look like children’s fiction, partly because they share the same functional constraints, but partly, one suspects, to exploit the readers’ loyalty to the more popular genre.

Religious objects are, of course, particularly prone to acquire symbolic connotations, however functional they may also be. Indeed, the development of the codex form among early Christians is ascribed by Roberts & Skeat (1983) to the demands of genre. Although codex-like notebooks were in existence during the first century AD, the roll was the main book format and continued to be used for certain (especially legal) purposes throughout the middle ages and beyond. Yet the vast majority of early Christian writings are in codex form. Although its advantages seem obvious to us today, Roberts & Skeat are not convinced that it was adopted by Christians for exclusively practical reasons. For one thing, they were not the only group for whom ease of reference and compactness would be attractive. Moreover, those who were used to rolls appear to have found little difficulty in finding their way around, and the surprisingly slow introduction of seemingly obvious reference devices, such as line or page numbering, indicates that cross-reference was not a priority in the early church. Roberts & Skeat’s tentative solution to the problem is that the first gospel, or, alternatively, earlier notes of the sayings of Jesus, might have been written on codex-like notebooks and that the format might thus have acquired a symbolic value (aided by its dissimilarity to pagan and Jewish rolls).

This pattern of development seems to be entirely normal—that is, access structures, those most functional and directly audience-related of text components, are adopted, in part, because of their connotations. The evolution of new methods happens because people copy good ideas—not always because they have analysed them in depth. Black (1956, 1961) traces the establishment of Bible printing practices in the first half of the

sixteenth century—the story seems to be of one major innovator (Robert Estienne) responding to the needs of users (the new style of independent Bible reader of the Reformation), and other printers copying the model thus established. Black shows that Estienne himself owes much to the manuscript tradition.

At much the same time, many of the access devices we now take for granted developed in response to the growing number of readers, and the build-up of science and literacy (Steinberg 1974; Eisenstein 1979). Indexes and cross-references were made possible by the multiple reproduction of books, but they relied, too, on those books being numbered.

Numbering systems

A document without page numbers is almost unthinkable today, even when some other system, such as paragraph numbers, is also present. However, page numbers, a system on which a number of other access systems depend, appear to have taken some time to become fully established. Although a fair number of early books had page numbers (Turner 1977), Roberts & Skeat (1983: 51) report that

‘in the whole of ancient literature there is no example of a page reference being given, and the reason is obvious, namely that no two manuscripts are identical.’

Instead they suggest that page numbers were useful for binding and for checking that no pages were missing.

The ubiquity of page numbering today is partly ensured by its inclusion in printers’ and publishers’ house styles, but this was evidently not the case with most early printers. Smith (in press) has suggested some reasons why the introduction of folio or page numbering was relatively slow. Firstly, she argues, other reference systems work just as well, and, secondly, in some circumstances—fictional or devotional works, for

example—bookmarks suffice and reference systems are often unnecessary.¹⁷⁴

Even so, the advantages of page numbers seem so overwhelming that it is hard not to put down their slow introduction to the unquestioning conservatism that is inherent to craft traditions. Quite apart from their use in indexing and cross-referencing, numbering systems are, as Roberts & Skeat suggest, useful for the making of books and documents. Even in the printing of folio editions, quite apart from the multi-page sections common today, pages must be laid out (or ‘imposed’, in printers’ jargon) so that they can be printed from one forme and folded with the pages in the right order. Even in the simplest documents, numbers are useful for collation and checking.

Smith distinguishes between ‘arbitrary’ and ‘non-arbitrary’ numbering systems, using the terms in much the same way as my own ‘arbitrary’ and ‘meaningful’ artefact structures (Chapter 7). Page numbers indicate arbitrary divisions of the text—whether or not pages are treated as topic frames. Many books contain more than one series of page numbers, but generally for technical rather than semantic reasons. For example, preliminary pages traditionally employ roman numerals, with the main arabic series starting on the first page of the ‘main text’. The functional purpose of this is to allow the preliminary pages and index to be compiled after the main text has been paginated (Butcher 1975). Technical manuals often use a separate numbering series for each chapter or section, so that a single section can be updated without reprinting the whole text.

Non-arbitrary reference systems include: the numbering of lines (termed ‘stichometry’ by palaeographers),¹⁷⁵ where line endings are meaningful, as

¹⁷⁴ On the whole, this is still the case, although the advent of literary criticism and media studies means that any text is liable to be cited in an academic context. Page numbers are also useful when the bindings of cheap novels disintegrate and pages must be reassembled. It should also be remembered that, in the literary or poetic context, language is the artist’s subject as well as his or her medium. Eighteenth century writers, such as Sterne, Fielding and Swift, were especially prone to comment on formal aspects of books as printed objects. McKenzie (1986) has discussed specific allusions to page numbering by Joyce.

in poetry, computer programs, and some reproductions of text as data for linguistic or bibliographic analysis; the numbering of paragraphs; and the numbering of headed sections. Line numbers are clearly a specialized form, but paragraph or section numbers have a general utility which has been more obvious at some times than at others. Parkes (1976) has shown that numbered sections became an essential part of the apparatus of late medieval scholarship, and they are in common use today in certain types of text (notably, technical reports and textbooks).

A question at least as obvious as ‘why did page numbering take so long to catch on?’ is ‘why haven’t non-arbitrary numbering systems become more widely used?’. Their utility was clear in the manuscript age, since references could be cited even though each copy of a work would have different page breaks. They have become a standard feature of Open University courses because they aid the discussion of texts by groups of writers or students. They also have advantages for printers, who need not delay the setting of internal cross-references and indexes until the pages are established.

A confident and accurate answer would require a historical survey of some kind, but an intuitive response is to focus on the rhetorical effect of numbering systems.¹⁷⁶ For some, numbered sections may be symptomatic of what Nash (1980) termed ‘programmed’ text (Chapter 4) in which the numbers are something of a cohesive cop-out. The numerical order gives an element of apparent continuity which enables writers to avoid making the connections between paragraphs explicit. This is certainly observable in the drafting of regulations and technical documents, where no argumental flow between paragraphs is normally considered necessary. Instead, subsumed under a common heading, such paragraphs relate to each other as items do in a list—that is, only by virtue of their common

¹⁷⁵ Thompson (1912) reports that stichometry was mostly used as a means of computing the payment due to scribes—much as modern printers are paid per thousand ens of set. However, he also reports instances of manuscripts with every hundredth line or verse marked for reference purposes (or some other interval).

¹⁷⁶ I have published a fuller version of this argument, with examples, elsewhere (Waller 1977).

membership. Some writers are sensitive to such associations, and may additionally feel that to show a new paragraph with a line space and a number, rather than a new line and indention, is to make more of a break than they would prefer; numbering may also have an inhibiting effect on the occasional instinct to write a very short paragraph.

The connotations of paragraph numbering may be of either excessive or inadequate linguistic cohesion. Whereas simple series of numbers (1...n) may look as if paragraphs are just a series of unconnected pensées, a structured series (1.1, 1.2...1.n...n.1, n.2 etc) may look excessively organized. The distinction is aptly illustrated by comparing the numbering of Wittgenstein's *Tractatus logico-philosophicus* (1922/1971) with that of his later *Philosophical investigations* (1958). The highly structured six-level numbering system of the *Tractatus* reflects its positivist philosophy and its apparent goal of completeness and self-sufficiency.¹⁷⁷ The later work, though, reflects a quite different attitude to language and logic and is presented as a sequence of sometimes unconnected remarks, numbered in a simple series. Access structures, although strictly functional, may nevertheless carry connotations of the genres with which they are most closely associated.

Page layout as access structure

Even in the days when numbering systems were rare, of course, ideas always had a constant location within the copy each individual reader happened to have access to; and individuals would sometimes supply their own referencing systems. This stability of graphic layout, combined with the fact that books, being scarcer than today, were probably more intensively studied, might well have obviated the need for the elaborate access systems required by today's readers.

¹⁷⁷ Hewson (1983) has analysed the numbering system of the *Tractatus* from a typographic viewpoint, and made some critical observations about its effectiveness.

The Roman rhetorician Quintilian appears to have regarded the layout of pages (or wax tablets, rather) as a ‘more expeditious and efficacious’ variation of the elaborate place-memory systems recommended by most rhetoric teachers of his era. He advises the student

‘...to learn by heart from the same tablets on which he has written.; for he will pursue the remembrance of what he has composed by certain traces, and will look, as it were, with the eye of his mind, not only on the pages, but on almost every individual line, resembling, while he speaks, a person reading.’ (Quintilian, Book XI, Chapter II, 32)¹⁷⁸

Saenger (1982: 396) comments that ‘the new readily available university texts of the later Middle Ages, replete with chapters, subdivisions, and distinct words, made possible a form of memorization based on the retention of the visual image of the written page’.

Many people (and I am one) can supply anecdotal evidence that they are sometimes able to locate ideas in books, even if not memory, simply from their location within the book—they remember whether the page is near the beginning or the end of the book, and whether the idea is at the top or the bottom of the page. The educational psychologist Ernst Rothkopf (1971) tested this hypothesis in an experiment and reported evidence that seems to confirm such intuitions.

This informal use of the appearance of a page for information retrieval is threatened by recent developments in electronic publishing. ‘Dynamic text’ or ‘hypertext’ (Weyer 1982; Conklin 1986) offers the reader an interactive reading environment. Text is presented on a computer screen in a nested form—the reader points (with a ‘mouse’) to a heading and the relevant section of text ‘unwraps’ on to the screen. He or she may also point to a word and obtain a definition or a cross-reference (diagrams may be similarly unwrapped).

¹⁷⁸ Yates (1966: 41) comments: ‘I understand this to mean that this method adopts from the mnemonic system the habit of visualizing on “places”, but instead of attempting to visualize shorthand notae on some vast place system it visualizes ordinary writing as actually placed on the tablet or page.’

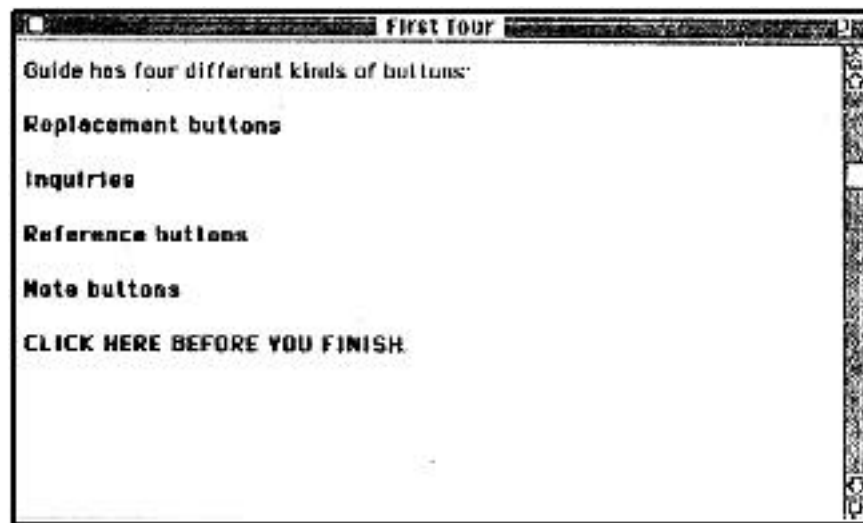


Figure 8.1a. A screen 'page' from a text prepared on the *Guide* dynamic text system (Brown 1986).

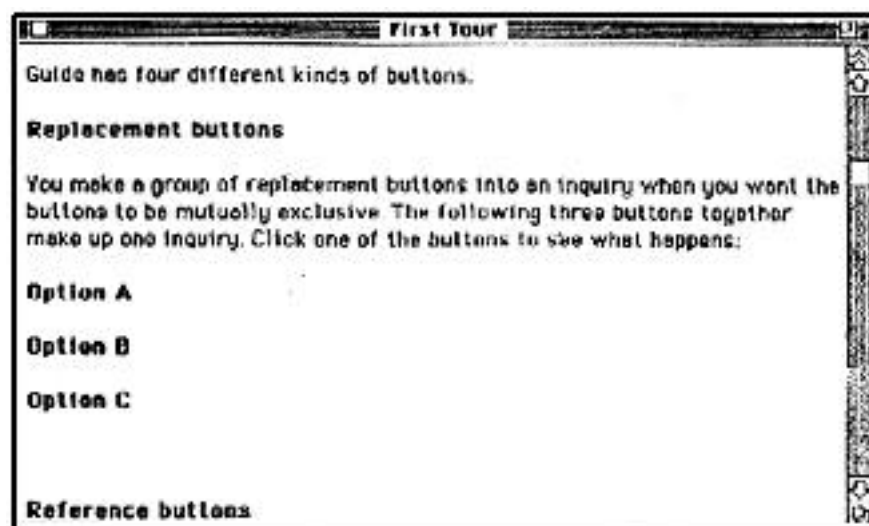


Figure 8.1b. The 'same' page after a reader has unwrapped a heading.

In the implementation of this concept shown in Figure 8.1 it is apparent that after the reader has unwrapped a heading, the relative positions of other headings and components has altered. Although a certain amount of 'undoing' is allowed by the system, it may be impossible to retrieve a 'page' on a subsequent occasion in exactly the same form. It may also be impossible for the writer to predict the precise juxtapositions that might arise when a text is actually used: many of the usual cohesive techniques (for example, the use of forward and backward reference) are placed under

considerable strain by dynamic text.¹⁷⁹ The problem is compounded by the fact that, in some applications (including the one illustrated in Figure 8.1), readers can annotate or change the author's original text. Unless some way of attributing such changes to individuals is built into electronic text systems, this could suggest a bibliographer's nightmare.

Electronically delivered text focuses us on features of books and reading that we mostly take for granted, especially their physical nature. Garland (1982: 5) comments:

'Whenever I rhapsodize about the opportunities presented by the electronic media, at the back of my mind I find myself thinking, "Yes, but a book is a book is a book. A reassuring, feel-the-weight, take-your-own-time kind of thing...".'

And, as Kerr (1986) has pointed out, electronic text does not allow you to stick a finger between two pages while examining a third. The active reading strategies encouraged by educators (Chapter 4) assume that the text remains stable. Readers need to be able to build a mental map of the text as a physical object, in which headings, illustrations and other graphic features act as landmarks. It must also be asked whether the amount of information to view at any one time has an effect on our ability to understand complex arguments. In the 25 line display typical of current computers, there is a higher probability that the beginning or end of the sentence you are reading will be out of sight.¹⁸⁰

Benest & Morgan (1985) recently developed a prototype electronic text system that emulates traditional books. Readers are presented with realistically-sized 'double-page spreads' with shadows imitative of the bulk of a real book—the shadow is larger on the right-hand side at the beginning of the book, and larger on the left-hand side at the end. By

¹⁷⁹ Writers conventionally treat texts as if they are static physical objects—to keep track of their linear arguments even the most 'codified' of prose has indexical features—words or phrases which point to some other part of the (static) text. References which point backwards, forwards or to the immediate textual environment are known, respectively, as anaphoric, cataphoric and deictic.

¹⁸⁰ I have published a slightly fuller version of this argument elsewhere (Waller 1986).

touching a mid-point of the shadow, the book opens at that point, and single pages can be touched by touching a dog-ear at the corner of the page. There is a potential in such a system for book-marks, note-taking, and all the traditional features of printed text, without losing sight of the extra electronic potential for on-line dictionaries, cross-referencing and easy updating.¹⁸¹

Benest & Morgan's system may be seen as an instance of the normal progress of new communication techniques, which often require a transitional period in which they imitate the old, and in which new expressive and interpretative techniques can gradually develop. For example early printed books imitated manuscripts,¹⁸² and early film-makers used fixed cameras in imitation of the fixed viewpoint of the theatre audience. In a welcome contrast to some of the 'literacy revolution' theories already encountered, Hirsch (1967) suggests that

'the transition from script to print was rarely dramatic...[it] was continuous and broken, and I venture to say that all great discoveries, all so-called new movements, harbor the same contrasting elements, continuity and radical change.' (p. 1–2)

Co-operative and uncooperative media

It is arguable that the introduction of greater accessibility has had the effect of turning text from what Cherry (1966: 16) termed an uncooperative medium into a co-operative one. A spoken conversation is the archetypal co-operative medium, since the participants must agree on the topic, when to interrupt or give way, and when to finish. An unsegmented written text, on the other hand, gives the reader little option but to start at the beginning and continue reading until the end is reached—or to cope with the insecurity of random encounters. The greater

¹⁸¹ Burrill (1986) has also proposed a system that imitates a number of book-like features.

¹⁸² Smith (in press) suggests that this conservatism might be in part due to the fact that early printer's copy often consisted not of an author's draft, but a 'published' manuscript edition.

the degree of segmentation of written language, and the greater the degree to which segments are labelled and indexed, the more co-operative the text becomes. The accessibility afforded by typographic structuring, and typographically-structured adjuncts such as headings, contents lists and so on, can be seen as the basis of a conversation between reader and text.

Although conversational models of written text have been proposed (Chapter 5), the detailed study of co-operation in discourse has, not surprisingly, focused on spoken conversations. In fact, with a few exceptions, 'discourse' is normally assumed by linguists, sociologists and others involved in this interdisciplinary field to be spoken (for example, Gumperz 1982, Coulthard 1985).¹⁸³ One of those who uses the term in relation to text, Hoey (1983: 27), refers to the doctrine of the primacy of speech to justify his view of text as containing implicit dialogue:

'If dialogue has primacy over monologue, it is but a small step to seeing monologue as a specialized form of dialogue between the writer or speaker and the reader or listener'.

Clearly we should be careful about applying concepts developed for one medium to the other.¹⁸⁴ Telecommunications apart, spoken conversations involve the physical presence of both participants who share a common situation: they share the place in which the conversation occurs, the physical presence of objects to which they may wish to refer, and the social setting. However, since discourse analysts ascribe many aspects of the management of conversations to prosody and paralinguistics, and since

¹⁸³ A problem with a number of accounts of 'discourse processes' is that, although they usually acknowledge important differences between written and spoken texts, the distinction is not carried through to all stages of analysis. De Beaugrande and Dressler (1981), for example, use only examples of spoken conversations in their chapter on situationality (the handful of written examples use passages of dialogue), but their chapter on coherence appears to assume the inspection of a written text by a reader. Brown and Yule (1983), whose textbook on discourse analysis is in most respects a model of clarity, also veer between spoken and written examples. In the context of ethnomethodology, McHoul (1982) has challenged the exclusive concern of its leading figures with immediate social contact. Reading, a solitary activity, is not regarded by some as a social act.

¹⁸⁴ This caveat applies in both directions. We have already noted (Chapter 3) how, in spite of the doctrine of the primacy of speech, linguists have to edit language samples to conform with grammatical rules that are only actually adhered to strictly in text.

typography and punctuation is seen as the graphological equivalent of paralanguage, it is worth reviewing the role of typography in the light of some recent studies of the pragmatics of discourse.

Grice's Co-operative Principle

The philosopher HP Grice (1975) has made an influential and widely cited study of co-operation in discourse. Although he assumes the context of a spoken conversation, we must clearly take note of his theory if we are to apply a conversational model to written text; and in any case it has a more general significance for our concept of language. Grice's theory of 'conversational implicature' has become widely accepted as an explanation of the fact that the language of conversations is frequently indirect. Take the following exchange, for example:

A: I can't find any whisky

B: John was here

The sentence meanings of this exchange do not adequately explain the sense actually made of these statements by the speakers, although we have no difficulty in constructing a scenario in which the conversation might occur. John might have drunk the whisky, or it might have been hidden because John, a temperance campaigner, was coming. The knowledge shared by A and B would ensure that A knows which of the alternatives is more likely.

Grice describes a 'co-operative principle' which governs our contributions to conversations, and which we assume others will also obey:

'Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged' (Grice 1975: 45).]

This is expanded into four maxims which we are said to normally obey and expect others to obey:

Quantity	Make your contribution as informative as required for the current purposes of exchange. Do not make your contribution more informative than required.
Quality:	Try to make your contribution one that is true, specifically: do not say what you believe to be false; do not say that for which you lack adequate evidence.
Relation	Make your contributions relevant.
Manner:	Be perspicuous, and specifically: avoid obscurity; avoid ambiguity; be brief; be orderly.

In our example, then, A can assume that B is co-operating and that his or her answer is therefore relevant and adequate.

In practice the maxims are not always easy to distinguish. For example, a violation of Manner, resulting in incomprehension, might be diagnosed by a reader as a problem of Quantity (more information required) or Relation (different information required). In fact for practical purposes, Manner is not a particularly helpful category—it is contradictory, for one thing (to ‘be brief’ might lead to ambiguity)¹⁸⁵—and could be seen as simply an injunction to obey the other three maxims.

In a conversational setting, people can directly challenge apparent violations of these principles by requesting more, clearer or better information. However, the co-operative principle is so strong that rather than do so, they may make a further inference that the ‘violation’ was intentional and therefore ironic. Or they may construct an alternative scenario in which the violation does in fact make sense.

Quality obviously applies equally well to text as to speech, although, since readers cannot directly challenge writers, their trust in written testimony cannot be guaranteed—as Clanchy (1979) observes in relation to the gradual development of trust in written records by medieval readers. Today, publishers act as gatekeepers to the public domain, and in scientific publishing there are organized systems of validation and

¹⁸⁵ As Shuy & Larkin (1978) have pointed out in relation to the language of insurance policies, the goals of non-ambiguity and brevity may be incompatible. Bhatia (1983) makes a similar point about legal texts and suggests a graphic ‘easification’ method as an alternative to simplification.

refereeing (Gordon 1980). Trust is partly engendered by the reputation of a journal or a publisher, which has to be won from the community of readers and critics.¹⁸⁶ The concept of public relations, though, rests on the assumption that trust can be engineered by correct attention to forms of presentation—it is not entirely to the credit of typographers that such a large part of the profession, and its educational system, is geared to this end. The confidence engendered through presentation seems to be hard to escape from. A notable attempt is the scientific journal *Evolutionary Theory*, apparently respected by the scientific community, which appears in an extremely amateurish, home-made form. However, the editors still feel the need to account for the apparent lack of quality, since displayed prominently on the cover is the motto ‘Dedicated to the primacy of content over display’.

In so far as real readers take on the role of the imagined reader, authors of novels can, in effect, ensure that all of Grice’s maxims are met. If they do not—if they are boring, incredible, irrelevant or cryptic—they simply lose readers. For writers of functional texts (such as directories or manuals) the imagined reader cannot be regarded as a fiction in quite the same way, but must be seen as the range of possible actual users. In terms of Grice’s maxims, they cannot always be responsible for the relevance of information for each reader, nor for the appropriate quantity. They can, on the other hand, be held accountable for quality, and bear a large measure of responsibility for manner. In this context we can view typographically signalled access systems as the means by which non-fiction writers can cope with the requirements of relevance¹⁸⁷ and quantity while directing their text at a composite imagined reader.

Van Dijk’s relevance cues

¹⁸⁶ It is interesting that Clanchy (1979: 103) notes that in medieval times ‘the commonest sign of an amateur writer is bad layout’.

¹⁸⁷ Sperber & Wilson (1986) have built a broad theory of cognition and communication around the relevance maxim.

Although he makes no overt reference to Grice, van Dijk (1979) has published a ‘tentative list’ of the cues through which readers may determine the relevance of a text or text component (Table 8.2) in which graphic factors are listed along with lexical, syntactic and semantic ones.

1. *Graphical:*

type size, boldness
italics, spaced, underlining, margin lines, boxes/frames, etc;
make-up, leads, heads, etc.; indentation; text ordering

2. *Phonetic/phonological:*

stress, pitch, volume, length, pause

3. *Paratextual:*

gestures, facial expression

4. *Syntactical:*

word order
cleft sentence structure
topicalization
paragraph and discourse ordering

5. *Lexical:*

direct relevance expressions: *important, relevant, crucial*, etc.
theme indicators: *the subject/theme/... is:*
summarizers: *in brief/short, in other terms/words*, etc.
concluders: *the conclusion, result, etc. is; we conclude...*
connectives: *so, thus, hence*
superstructure signals: *our premises are, the conclusion is, it all happened in, suddenly...*
complex event names: *accident, vacation*, etc.

6. *Semantic:*

topic-comment function of sentences
contrastive/differential structures
thematic words and sentences (topical expressions)
summarizing or introducing sentences (topical)
paraphrase
repetition
presupposition and semantic ordering
descriptive level (relative completeness)

7. *Pragmatic:*

global illocutionary force indicating devices: *I (hereby) warn (ask, congratulate) you*; particles, etc

8. *Schematic/superstructural:*

global categorical ordering of the text

9. *Stylistic:*

specific variations on the other levels

10. *Rhetorical:*

rhetorical operations: parallelisms, repetitions, contrast, etc. (on all other levels)

Table 8.2 A tentative list of relevance signals in discourse (van Dijk 1979).

It is noticeable that this list includes a wider range of graphical cues than

phonetic ones—in contrast to the conventional linguistic view, which is that graphic cues are a poor substitute for the richness of prosody and paralanguage. Van Dijk, of course, is concerned with the text rather than the sentence level, and his analysis suggests that at this level the position is reversed—that the graphic medium provides a richer repertoire of cues than the spoken.

Van Dijk's analysis can be correlated to some degree with the present genre model, suggesting a possible harmonization of the function of graphic and other cues. He relates the cues in his list both to what he terms 'textual relevance' (the internal relations of parts of a text) and to 'contextual relevance'—why a particular topic or theme should be relevant to particular readers with particular purposes. Textual relevance is itself subdivided into local and global kinds. Since local relevance is mostly concerned with the sentence level, the graphic contribution would presumably be limited to the normal repertoire of punctuation marks, italicization and so on. Broader typographical cues would then relate mostly to global and contextual relevance, which we may see as roughly parallel to the distinction drawn in the present study between topic and access structures. Van Dijk does not actually assign particular functions to the cues in his list, which could clearly be extended to include a richer view of typographic resources and access systems.

Van Dijk hints at a possible conflict between contextual and textual relevance. Although, on one hand, parts of the text will be deemed more or less relevant in relation to the reader's interests and purposes (contextual relevance),

'yet language and communication conventions at the same time require that he will construct a picture of what was intended to be relevant by the speaker. This means that the reader will have to look for the "objective" [ie, textual] relevance cues in the text.' (p. 123, author's emphasis)

As a case in point, I find myself reading van Dijk's paper in precisely this manner. I know from his other writings that he is not very interested in

graphic matters, and that, although they are the main reason for my interest in his paper, they are probably only included for the sake of completeness. So as well as trying to relate his ideas to my own model, I have to be satisfied that I understand his intended message and have represented him fairly.

This reflects something of the tension in the genre model that arises from the difficulty in distinguishing between topic and access structures in practice. In a perfect world, it might be thought, the writer's choice and sequence of topic would exactly match the reader's requirements—such worlds, although far from perfect, do in fact exist in education and training.¹⁸⁸ Given the variety of prior knowledge, skills and purposes among less controlled audiences, though, we must distinguish between those access systems which map exactly onto the author's topic structure, and those which, listed in some other rational but not text-dependent order, can be freely accessed by the reader. The first kind might include headings and the contents list; the second would include alphabetically arranged indexes and glossaries, and standardized keywords chosen from a list that is not specific to the text in question (ie, from a list applied uniformly across a database). Thus my reading of van Dijk's paper, as an outsider relative to his discipline, would have been aided by a broader range of cues, some of which may not be traditional within the genre of 'scientific paper'—more headings, a glossary, perhaps an index, and tutorial explanations or critiques by others aimed at a multi-disciplinary audience. This difference in access structures reflects a distinction between two genres of scholarly writing—the textbook, geared to students and those new to a discipline, and the academic paper, topic-oriented and addressed to experts.

¹⁸⁸ Examinations are often set to test knowledge of a standard text, rather than of a subject area for which a range of texts might be available; a well known example is the part of the driving test where examinees are questioned about the Highway code. Trainees in subjects like nursing, the police, accountancy and law will be especially familiar with this kind of exam.

Turn-taking

In direct dialogue, relevance can obviously be negotiated between the participants. Another important consequence of the presence of both participants is that, for dialogue to take place, they need to agree to take turns. In the written context we can see that even the most self-organized of reading strategies (for example, of the book-shop browser) still involve periodic compliance with the writer's intended sequence. The sociologists' concept of turn-taking (Sacks, Schegloff & Jefferson 1974) recognizes that there is a limit to the degree to which conversations can be interactive and that most social settings and cultures embody rules for 'floor apportionment'. These rules may be tacitly observed, as in social gatherings, or even explicitly specified, where a chairperson allocates time to members of committees or assemblies.

Turn-taking suggests a possible interpretation of the different levels of chunking in verbal language: that each chunk represents a unit of the conversation between writer and reader, the interruption of which risks misunderstandings at a corresponding level of analysis. Thus, incomplete apprehension of a single word risks lexical error, of a sentence risks grammatical error, and of a paragraph risks an error of logic or argument. In discourse analysts' terms, graphic segments may represent 'transition relevance points'.

Most people would probably regard the chapter as the basic unit for turn-taking in reading—we expect to read it at one sitting—and authors may even give explicit instructions to certain categories of readers to skip chapters. Some textbooks, in fact, include elaborate charts that show teachers which chapters should be studied for courses of different duration. Charts such as those shown in Figure 8.2 are now a standard component of college textbooks in the competitive US market.

Whereas the textbook in which this chart appears expounds its subject within chapters in a traditional manner, others are expressly designed to

be conversational in style and structure, even within chapters. Open University courses, for example, were originally conceived as ‘tutorials in print’ (Rowntree 1982) containing ‘self-assessment questions’ for students to monitor their progress. Textbooks such as these are based to a large extent on the work of educational psychologists who have exhaustively investigated the use of inserted questions (reviewed by Anderson & Biddle 1975)¹⁸⁹—although question and answer sequences in the form of Socratic dialogues and catechisms are, of course, an ancient pedagogic technique.

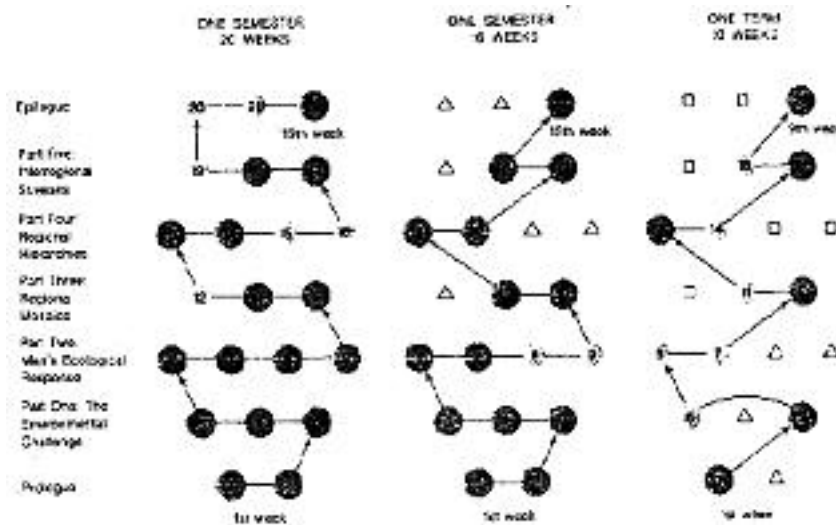


Figure 8.2 From P. Haggett, *Geography: a modern synthesis*, 2nd edition, London: Harper & Row, 1975). Reduced, original in two colours.

Question and answer structures present typographers with what has become known as a ‘routeing’ problem. Some recent case studies have been published in relation to question/answer sequences in textbooks (Waller 1984a) and the design of administrative forms (Waller 1984a; Frohlich 1986). Approaches range from radical alternatives to prose (Lewis, Horabin & Gane 1967, Wright & Reid 1973, Bhatia 1983), interactive computerized alternatives (Frohlich, in press) to enhancements of

¹⁸⁹ The original source of the steady stream of papers on inserted questions that appeared in the educational psychology literature of the 1970s was Rothkopf’s theory of ‘mathemagenic’ activity (Rothkopf 1970). The Greek roots of ‘mathema-genic’, a word coined by Rothkopf, suggest ‘giving birth to learning’—his central claim is that it is not so much the structure of texts or curricula that determine effective learning as the activities and attitude of the learner. That is, the use of inserted questions was designed to encourage readers to engage in the learning task with a questioning mind; Rothkopf was able to show the use of questions improved the learning of all aspects of the text, not just the topics focused on by questions. The theory is no longer very fashionable, but could be reinterpreted as an attempt to encourage a conversational approach to learning. See also the critical review by Carver (1972) and reply by Rothkopf (1974).

conventional techniques (Cutts & Maher 1986; Department of Health & Social Security 1983; Waller 1984a).

But whereas textbooks and administrative forms employ explicit questioning techniques, some have suggested that all text can be seen in terms of an implicit dialogue between writer and reader. Coulthard (1985) concludes his book on spoken discourse with an invitation to consider the extent to which techniques for conversational analysis might apply to written text:

‘As you close this book you might like to speculate on the function of full stops. Are they perhaps interaction points, places where the writer thinks the reader needs to stop and ask questions about the previous sentence, questions whose range I initially restrict by the structuring of my argument and which I subsequently answer in the next or later sentences.’ (Coulthard 1985: 192)

This is exactly the approach taken, independently, by Winter (1977)¹⁹⁰ and Gray (1977).¹⁹¹ Gray suggests that whereas dialogue consists of explicit questions and answers, monologue consists of answers that ‘contain’ (or imply) their questions:

‘Composition is “composition” by virtue of the fact that it “puts together” in subject-attribute assertions what in conversation is separated by the speakers—the raising of the questions and the rendering of the answers to them.’ (Gray 1977: 4)

A simple demonstration text used frequently by Winter and his colleagues may serve as an example: ‘I was on sentry duty. I saw the enemy approaching. I opened fire. I beat off the attack’. Hoey (1983) imputes the following questions to the imagined reader:

¹⁹⁰ An accessible account of Winter’s work has been published by Hoey (1983). It is possible that Hoey, a colleague of Coulthard at the University of Birmingham and warmly acknowledged in his preface, inspired the remarks just quoted.

¹⁹¹ Widdowson (1979: Chapter 13; 1980; 1984: Section 3) also takes the same view and uses the same technique of imputing questions to an imagined reader to explain relationships between assertions. His argument is not pursued as far as those of Winter and Gray, who construct quite elaborate grammars, but it is more completely integrated into the wider literature of pragmatics and cognitive psychology.

I was on sentry duty.	Situation
<i>What happened?</i>	
I saw the enemy approaching.	Problem
<i>What was your response?</i>	
I opened fire.	Solution
<i>What was the result of this?</i>	
I beat off the attack.	Result/Evaluation

There is a potential difficulty here in identifying the particular questions posed by the imagined reader. For example the question in response to ‘I was on sentry duty’ might just as appropriately be ‘why?’ or ‘where?’.

Gray’s answer would be that they are simply analytic devices:

‘each question is determined as much by the succeeding assertion as by the preceding one. The question...indicates the relationship between two assertions.’ (Gray 1977: 15)

Gray recommends the use of implied questions as part of what he terms a ‘generative rhetoric’—a technique for composition in which writers can determine the direction of their argument by articulating (to themselves, not in their composition) the questions arising from preceding assertions.

Whereas Gray does not have very much to say about overall patterns of implied questioning, Winter and his colleagues justify their implied questions by reference to the formulaic sequence (situation-problem-solution-result-evaluation) indicated in the example quoted above. They detect this pattern, with numerous variations and embedded sub-sequences, in samples of real prose. If there is a normal sequence, as they suggest, then readers presumably know what question to ‘ask’ by reference not only to the substance of the initial statement but to their tacit knowledge of the conversational pattern anticipated by the author within a particular type of document. Winter’s data tends to be drawn from popular science writing, hence the prominence of the problem-solution pattern in his analysis. Other document types, presumably, may reveal a fuller variety of dialogue patterns.

Two implications for typographers may be drawn from the conversational view of text. Firstly, it suggests that textual units may not always be linked in the systematic way that a focus on topic structures alone might suggest. Headings, for example, might have no relationship, hierarchical or otherwise, with each other but only with their immediately preceding and following text. Such headings give prominence to an implied question that requires special emphasis or that constitutes a major transitional point in an argument, but have little meaning to the browsing reader. Editors and typographers have to take special care to coordinate this local role of headings with their global role as part of a hierarchy—to ensure that headings make sense not only in their local context as transitional devices but also when collected together in a contents list.

Secondly, our attention has been drawn once more to the significance of genres or text types. Discourse analysts and ethnographers have drawn attention to the fact that the context of a conversation affects the relationship between participants and what is said.

In addition to the conversational maxims of Grice, a further influential strand of linguistic philosophy that sheds light on such relationships is the speech act theory of JL Austin. Austin (1962) drew an important distinction between what he termed the constative and the performative uses of language.¹⁹² Whereas the constative function refers to the use of language to make statements about the world, the performative function describes the use of language as an instrument for the completion of a task. The key to the difference lies in their evaluation: constatives such as ‘This thesis is written on white paper’ can aptly be called true or false, but a promise, a warning or a greeting cannot. To use one of Austin’s own examples, the sentence ‘I name this ship the Queen Elizabeth’, as uttered when smashing the bottle against the stem, would not normally be called true or false. Instead, it would be deemed, in Austin’s terms, felicitous (if uttered

¹⁹² The brief summary that follows cannot do justice to Austin’s theory, nor to the complexity of the debate that has ensued from it (reviewed by Levinson 1983). The intention is simply to illustrate the principle of instrumentality.

on the right occasion by the person officially designated to do so) or infelicitous (for example, if uttered as a joke).

Austin distinguished between three ways in which an utterance may be viewed. Considered as a locutionary act it is simply an act of speaking, say, a sentence (or writing one, although spoken examples are mostly used); considered as an illocutionary act, we must consider the act performed by the use of the sentence by virtue of the conventional or illocutionary force normally associated with it; for example, to say 'I promise that...' is to carry out the act of promising. Austin's third category is the perlocutionary act, which describes the creation of an effect through an utterance; for example, embarrassing or annoying someone. The distinction between illocutionary and perlocutionary is somewhat technical, and is not relevant in this context. Austin's theory is most often plundered for the concept of illocutionary force and this study shall be no exception.

Illocutionary force carries with it the notion of felicity conditions, which are the rules defining the valid use of utterances like 'I name this ship...' or 'I pronounce thee man and wife'. Favourite examples of infelicitous speech acts include 'baptizing a penguin' and 'ordaining a jar of anchovy paste'. Typography has its own equivalents to official ceremonies: bank notes, company seals and educational diplomas are only valuable if made and issued by authorized people, although an extensive rhetoric of value has been created around such objects—exploited notably by the advertising and packaging industries.¹⁹³ However, once we depart from 'official' acts such as the launching of ships or religious ceremonies the definition of 'felicity conditions' is problematic.

Eco (1981: 11) makes an interesting link between the notion of the

¹⁹³ The current leaders in this are Reader's Digest, from whom I have received phoney stock certificates, pay slips, and bank books. I have also received car registration documents (from Drive Publications) and computer punched cards (from Which?, who should know better). In a slightly surreal connection between the felicitous and infelicitous use of the rhetoric of value, a franking machine company sends real Bulgarian bank-notes to potential customers to symbolize the money they could save through their products.

imagined reader and speech acts:

‘the Model Reader is a textually established set of felicity conditions ...to be met in order to have a macro-speech act (such as a text is) fully actualized’.

Each text, it is suggested, implicitly signals to whom it is addressed—who is the ‘legitimate’ reader, and who is cast in the role of observer or outsider. We may complement this with a similar link between conversational maxims and surface style as made by Gumperz (1982: 131):

‘this channelling of interpretation is effected by conversational implicatures based on conventionalized co-occurrence expectations between content and surface style.’(my emphasis)

Large type and childish pictures suggest that children are being addressed: adults may choose such a book—as a gift for a child perhaps—and they may read it aloud to a child, or read it for some critical or evaluative purpose, but they do so as outsiders. This becomes very obvious when new newspapers are launched: their choice of format (broadsheet or tabloid), the size of their banner headlines, and the busyness of their pages signals their desired readership as much as anything they say.¹⁹⁴

Context

The role of typography in signalling the genre and illocutionary force of a text suggests an extension to Gray’s characterization of a written assertion as an answer containing its question. A written text, we might say, also contains its own context. (Although, bearing in mind the problems inherent in the container metaphor, noted earlier, it might be better to substitute ‘embodies’ or ‘implies’.)

This perception may help reconcile the conversational view of reading with Olson’s (1977) notion of the autonomy of text (Chapter 7). According to

¹⁹⁴ Numerous articles in the UK Press Gazette indicate that layout is generally agreed to be crucial to the success of new launches (eg Today, The Independent, News on Sunday). The October 1986 issue of Designer also contains a number of articles on newspaper design matters occasioned by the transfer to electronic page make-up.

Olson, written text has the capability of preserving explicit meanings in a reliable context-free manner. Because language is freed from its interpersonal function, reason and logic come to the fore and readers can extract meaning directly from the self-sufficient text. The modern belief in the self-sufficiency, or autonomy, of text is attributed by Olson to Luther's concept of scripture as its own interpreter. A major issue in the Reformation concerned the replacement of the Latin Bible, interpreted by the Church, with direct access to vernacular translations by ordinary people. The Protestant view of scriptural authority rests largely on the notion that the Bible is an autonomous text that contains meanings that can be understood adequately in cultures very different from the ones which produced it. The access devices discussed earlier can be seen as ways of enhancing this self-sufficiency by providing the answers to modern readers' questions, unanticipated by the original authors. There is perhaps some irony in the debate within the non-denominational Bible Society¹⁹⁵ that surrounds the provision of headings and summaries—although designed to aid self-study by ordinary readers, they inevitably reflect the priorities of their compiler.

Olson regards seventeenth-century British essayists, Locke in particular, as responsible for the archetypal autonomous text, citing also the Royal Society's perception of the link between plain language and clear thinking. Interestingly, Locke's own view of Bible layout is brought to our attention by McKenzie (1986). In his own commentary on the Epistles, Locke protests at their division into chapters and verses:

'that not only the Common People take the Verses usually for distinct Aphorisms, but even Men of more advanc'd Knowledge in reading them, lose very much of the strength and force of the Coherence, and the Light that depends upon it'.¹⁹⁶

¹⁹⁵ A founding principle of the British & Foreign Bible Society (now called Bible Society—for some reason they omit the definite article) was to print the scriptures 'without note or comment'. My remarks here are based on personal conversations with Bible Society staff during a discussion of their plans for various special editions of the Good News Bible in 1977. A brief defence of the commentary in that version can be found in Nida (1977).

¹⁹⁶ An Essay for the Understanding of St. Paul's Epistles. By Consulting St. Paul himself, 1707;

Locke's wish was realized in 1937 with the publication by Heinemann of *The Bible* design to be read as literature (described in Table 8.1), and almost all modern translations¹⁹⁷ follow suit, although marginal or superscript verse numbers are still provided for reference purposes. Since Locke's own *Essay concerning human understanding* is divided into chapters and numbered sections, he is presumably objecting not to all reference systems but only to those imposed on authors by others.

Olson's view has recently been disputed by Nystrand, Doyle & Himley (1986), who point out that formal speeches and lectures are as explicit as any written text, and that 'public signs, kit instructions and notes left on refrigerator doors'¹⁹⁸ are examples of context-dependent writing.¹⁹⁹ They use Olson's own paper to demonstrate how almost any writing is context-bound—it is contextualized by its publication in the *Harvard Educational Review*, its date of publication, its introductory literature review and its accompaniment by an abstract, footnotes and references. We might add to their list Olson's affiliation to the Ontario Institute for Studies in Education.²⁰⁰ These editorial and typographic features allow us, a decade later, to place Olson's ideas into a context which, for us, includes material published since that time (for example, Nystrand's criticism).

Nystrand et al claim that Olson's article 'functions not because it is independent of its context of use but because it is so carefully attuned to this context' (p 101). However, they seem to over-egg their pudding when they go on to claim that:

quoted by McKenzie (1986: 46).

¹⁹⁷ For example, *The Good News Bible*, and *The New International Version*. Hunt (1970) discusses similar features in the design of *The New English Bible*.

¹⁹⁸ 'Place-bound' writing is discussed further by Harweg (1987).

¹⁹⁹ Tannen (1982: 3) also disputes Olson's hypothesis. She suggests that it 'indeed taps features often found in spoken and written discourse respectively, but these result not from the spoken or written nature of the discourse as such, but rather from the genres that have been selected for analysis—casual conversation, on one hand, and expository prose, on the other.'

²⁰⁰ It may or may not be significant that McLuhan, Havelock and Innis also worked in Toronto.

‘it is difficult to think of many actual situations where writers do not know at least something substantial about their reader’s expectations even if they cannot always know them personally.’ (p 106)

The readership of the Harvard Educational Review is self-selecting to a large degree, but many texts cannot be aimed at specific audiences. The problem of determining the skills and needs of readers is widely recognized by those responsible for government information, technical literature and other widely-circulating non-fiction texts (as a number of the papers in Duffy & Waller, 1985, show). Moreover, the permanence of the written medium means that the author’s assumptions about the original readers of a text might be mostly irrelevant at a later date, or in another place. Although, since the Epistles were one of the last parts of the Bible to be written, their co-text (the Old Testament and the Gospels) is probably as familiar to modern readers as those Paul was originally addressing, there is very little in common between the original audience of, say, the minor prophets and ourselves—we have little option but to risk Locke’s scorn and use them out of context, if at all. One of the attractions of the typographically-distinct access systems described earlier is that they can be added at a later date without directly affecting the original author’s composition.

Nystrand et al criticize Olson for making an unfair comparison between informal conversation and formal written exposition, but in fact he does recognize that, since texts lack a shared situational context, they must assign ‘the information carried implicitly by nonlinguistic means [ie, in a conversation] into an enlarged set of explicit linguistic conventions’ (Olson 1977: 272).²⁰¹ In other words, written exposition attempts to predict the implications²⁰² of what is said in order to deal with them explicitly. If we

²⁰¹ The linguist Wallace Chafe, who has written extensively on oral and written language, has also commented that much of the paralanguage that accompanies speech is replaced by grammatical structures in writing (Chafe 1982).

²⁰² It is not altogether clear whether by ‘implications’, Olson means logical entailments or the sort of conversational implications discussed by Grice. If he means the former, then his views cannot easily be reconciled with Nystrand’s.

include in that 'enlarged set of explicit linguistic conventions' the typographic and editorial adjuncts that enable the text to answer a wider range of readers' questions than the author was able to anticipate, then perhaps there is no real quarrel between the autonomists and the conversationalists.

Widdowson (1984: 86) defines the achievement of accessibility as 'an alignment of different states of knowledge so that a common frame of reference is created'. He does not develop the concept in much detail, but it sounds similar to Nystrand's (1982) concept of shared semantic space (introduced in Chapter 5). In conversation this is negotiated—terms can be defined, language simplified, theories exemplified, and objections met on request. In text this can be achieved partly by the special adjuncts that have been developed to help readers navigate around complex texts. But it seems we must define access structure in broader terms also. By establishing and signalling the context—the genre—of written communication, typography indicates its relevance and scope and the social relations of its participants.

It is clear that there is considerable overlap between my three structures in well-designed texts. Topic structures are not just fact structures but argument structures in which information is focussed, backgrounded, overlaid—staged, in fact, to use Grimes' (1975) term—according to the writer's conversation with the imagined reader. The argument and the conversation must be achieved, of course, within the confines of the stage—the artefact. In the concluding chapter I shall endeavour to pull together the three different strands of my argument and suggest that typographic genres, containing implicit (and occasionally explicit) genre rules, are an important key to an integrated and natural textual communication.