GENERAL ISSUE

VISIBLE LANGUAGE

the quarterly concerned with all that is involved with our being literate

VISIBLE LANGUAGE

Literacy Literacy

This issue of Visible Language has been designed to support the final article, which discusses typography on the desktop. Therefore, the first three pages of each article demonstrate various aspects of desktop publishing.

Most desktop publishers do not have experience with design or computers, but are more familiar with traditional office equipment such as the typewriter. *Literacy, Literacy* demonstrates the typewriter's physical and formal constraints.

Literacy Literacy

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Abstract

The term literacy has recently been extended into a number of different fields, the best known probably being 'computer literacy'. A consideration of the different historical senses of the term suggests why it was chosen for generalization, and detailed discussion of three cases--scientific literacy, visual literacy, and cultural literacy--indicates the semantic aspects of the term that are most important in the process of extension. In all three cases, despite the authors' attempts to use literacy in what I call its descriptive sense, as an indication of the ability to read and write, the evaluative sense of the term--the mastery of a body of (often traditional) knowledge--is the operative one.

Few people interested in practically any aspect of reading or writing can have failed to notice that we are in the midst of a literacy explosion. Everywhere, it seems, there are references to either literacy or, even more frequently, illiteracy. Newspapers and news magazines tell us constantly of the literacy crisis. Jonathan Kozol has recently published a book called Illiterate America, ABC and PBS teamed up to bring the literacy crisis to prime-time television during National Literacy Month (September 1986), and books on different aspects of the problem headed the New York Times Book Review bestseller list during the summer of 1987--Allan Bloom's The Closing of the American Mind and E. D. Hirsch's Cultural Literacy. And even when we are not being reminded of the problem of illiteracy, the term 'literacy' and 'literate' seem to have been multiplying so rapidly, and in so many contexts, as to threaten the extinction of the terms they are replacing: 'knowledge' and 'competence'. A brief chrestomathy will illustrate the extent of the practice:

> Visual literacy is the ability to "read" visual material with skill, and to "write" with visual means, expressing oneself effectively and appropriately. (Elwell, 28)

A politically literate person will know what the main issues are in contemporary politics as he himself is affected, and will know how to set about informing himself further about the main arguments employed and how to criticize the relevance or worth of the evidence on which they are based, and he will need as much, but no more, knowledge of the institutional structures as he needs to understand the issues and the plausibility of rival policies. A politically literate person will then know what the main political disputes are about; what beliefs the main contestants have of them; how they are likely to affect him, and he will have a predisposition to try to do something about it in a manner at once effective and respectful of the sincerity of others. (Crick and Lister, 84)

All of this means that people more than ever stand in need of statistical literacy. . .if people are not simply to rely upon data force-fed them by people who are likely to have a stake in the conclusions to be drawn from them, they will need a basic competency to analyze, interpret, question, and arrive at their own conclusions about facts and arguments that are presented to them. (Miller, 226)

Computer literacy is defined as an appreciation of the general principles which underlie computer hardware, software, and the application of computing technology to various science, business, education, government and entertainment objectives. (Jones, et. al., 4)

> Get together with a group of teachers to bring common problems to . . . conscious attention, to become aware of system causes, and to take democratic action to improve the system. We call this consciousness–raising "social literacy training" because, as in all kinds of literacy, we are interested in reading reality, understanding it better, and taking informed action. (Alschuler et. al., 606)

> First–year graduate students enrolled in a required course in the history of psychology were tested for their familiarity with seventy–six eminent contributors to psychology and thirteen research and library sources. . .students who had previously completed an undergraduate course in the history of psychology fared better than those who had no such course. Nevertheless, the undergraduate course alone may not be sufficient to ensure the development of basic historical literacy. (Punches and Viney, 64)

> A certain extent of shared, canonical knowledge is inherently necessary to a literate democracy. For this canonical information I have proposed the term "cultural literacy." It is the translinguistic knowledge on which linguistic literacy depends. (Hirsch 1983, 165)

> The second meaning of literate—to be able to read and write at a functional level—can be extended to suggest that scientific literacy refers to the ability of the individual to read about, comprehend, and express an opinion on scientific matters. (Miller, 30)

One's first reaction to this proliferation of 'literacy' may be to deride the use of a faddish term that seems to mean no more than knowledge or competence: where one was once knowledgeable about a topic, one is now literate in it. But that would be to ignore the interesting question of why 'literacy' is the term chosen for expansion. Part of the answer no doubt lies with the fact that

'literacy' and 'literate', when modified, sound much catchier than 'knowledge' or 'competence': who would be seriously interested in 'computer knowledgeable' or 'visual competence'? Part probably also stems from the fact that literacy is a relatively recent term in these contexts, so its use suggests a new direction or initiative. And part is certainly due to the spate of educational reports which have dealt with declining literacy. But a good deal of it, I think, is due to a relatively normal extension of the meaning of the word 'literacy'.

Definitions of Literacy

One of the difficulties bedevilling any discussion of literacy is the fact that the term has such a wide variation in meaning, both historically and synchronically. *Litteratus* referred to anybody who could read and write Latin in medieval times, but the amount of reading and writing required varied greatly from place to place and from time to time (Clanchy, 177–82). For more recent times, researchers have suggested at least four historical stages corresponding with four levels of achievement in literacy. First is the signature stage, where the ability to sign one's name on documents is taken as proof of literacy (Myers, 26). The designation is unfortunate insofar as it suggests that the people in the stage regarded the ability to sign as proof of literacy. Instead it seems to be an artifact of our own historical research: signatures are available in greater abundance than anything else, and so are used for comparative studies. But there is also some educational warrant for their use, since until fairly recently reading was taught before writing, and so anybody who had learned how to write, even a signature, almost certainly had also learned to read (Cressy, 53–61; Houston, 178–92; Spufford, 19–44).

The second stage is often called the recitation stage, or the stage of Koranic literacy. Demonstration of literacy at

this stage requires either reading from a text or reciting portions of it from memory, without any necessary understanding of what is read. In the West the Bible was usually the text chosen (Clifford, 482–84); in Islamic countries, the Koran was, and still is, used (Scribner and Cole, 68–69). The third stage is the comprehension stage, in which literates are expected to be able to read and understand unfamiliar materials in a literal way (Myers, 27–28). The final stage is the one we are in now, the analytic stage, in which readers are expected to analyze and draw inferences from the material they read (Myers, 28; Clifford, 472–81).

As Resnick and Resnick point out, recent concern about the decline in literacy stems at least in part from using these higher-level and more demanding conceptions of literacy: "if writing one's name were what was meant by literacy, we would not be worried that illiteracy was a national problem" (371). And much of the semantic slipperiness of the term 'literacy' seems to stem from the same source. As the ability to analyze and draw inferences from texts is considered the defining characteristic of literacy, it seems reasonable to extend the word to other uses, often ones that are only tangentially concerned with reading and writing. Thus the ability to analyze material from any field, and to draw inferences from it, can be referred to as literacy in that area.

Facilitating this semantic shift is the fact that 'literacy' seems always to have had two distinct senses. One, which we may call descriptive, referred to the ability whose history has been briefly traced above. The second sense, the evaluative, assesses possession of a body of knowledge, usually of literature. This meaning apparently goes back to the Classical Latin *litteratus* "which meant 'literate' in something like the modern sense and also (in the most classical usage of Cicero) described a person with *scientia litteratum*, meaning a 'knowledge of letters' in the sense of

'literature'" (Clancy, 177). Richard Ohmann has recently treated this overlap in the nineteenth century (1985a, 675–77), and of course it is reflected in current dictionary definitions. It is presumably the combination of this evaluative sense of the word and the focus on analysis and inference characteristic of the analytic stage of literacy that leads to the use of 'literacy' to describe knowledge, and the ability to think, about any field.

Scientific Literacy

I don't mean to suggest that the people who use 'literate' or 'literacy' in this extended sense have necessarily reasoned this way. Indeed, one of the most thoughtful considerations of the extension of the term to another field suggests that this is not the case. Jon D. Miller, in "Scientific Literacy: A Conceptual and Empirical Review" (part of the Spring 1983 issue of *Daedalus* devoted to "Scientific Literacy"), recognizes the two senses of literacy: "To be literate has two quite different meanings: to be learned, and—perhaps what most people today mean when they speak of literacy or of being literate—to be able to read and write" (29). After a brief discussion of the century-long debate caused by the evaluative sense, he abandons it because "these contributions [to the debate] had as their focus the definition of being learned, not the issue of communicating science to broader populations" (30). He prefers instead a development of the descriptive sense; "the second meaning of literate—to be able to read and write at a functional level—can be extended to suggest that scientific literacy refers to the ability of the individual to read about, comprehend, and express an opinion on scientific matters" (30). More specifically, "two dimensions together—an understanding of the norms of science and knowledge of major scientific constructs—constitute the traditional meaning of scientific literacy as applied to broader populations. But if scientific literacy is to become truly relevant to our

contemporary situation, one additional dimension must be added: awareness of the impact of science and technology on society and the policy choices that must inevitably emerge" (31).

Even though it would be easier to derive scientific literacy from the evaluative sense rather than the descriptive, Miller prefers the other strategy because he is concerned not merely with information but with the expression of opinions based on that information. But there is a certain confusion in his argument deriving from its mixture of conceptual and empirical reviews: part of the time he presents a conceptual analysis of how he would like to have scientific literacy understood, and part of the time he reviews the ways others have actually understood and used the term. Thus between his initial characterization of literacy and his extension of it there is a subtle shift: literacy refers to the ability to read and write, but scientific literacy substitutes for writing the ability to "express an opinion on scientific matters." Presumably such an expression of opinion will be in the form of letters to the editor, to legislators, or to other officials, about "the impact of science and technology and the policy changes that must inevitably occur": the long final section of his paper is entitled "Implications for a Democratic Society," and his examples concern public reaction to such subjects as nuclear power and laetrile (31). "Expressing an opinion," however, suggests how far the definition has moved from the descriptive to the evaluative sense of literacy. First, if expressing opinions is the aim, the source of the information upon which the opinion is based doesn't much matter: it could come from listening to lectures or the radio or watching television just as easily as from reading. Although Miller thinks that most scientific information will come from reading—he refers to the popularity of *Science 83*, *Discover*, and *Omni* (46)—the ability to read has clearly been replaced by

the ability to understand, analyze, and draw inferences (the characteristics of analytic literacy) about scientific information from any source. Second, a strict translation of literacy into the scientific realm would lead to the ability to read and write *science*, the ability that scientists have. Being able to read and express opinions *about* science is quite different. And in fact the opinions being expressed are not strictly about science, but rather about "the impact of science and technology on society."

Visual Literacy

Despite his attempts to derive scientific literacy from the descriptive sense of literacy, then, Miller finally depends on a combination of the evaluative sense and the analytic conception of the term. And it seems that most other extensions of literacy, certainly most of the ones quoted above, can be derived from the same combination. 'Visual literacy' is one of the most interesting of these extensions, partly because it specifically refers to the presence of a semiotic system which must be mastered and partly because the original attempt to formulate it linked it with language rather than with literacy. The definition I included in the list above refers to the abilities to 'read' and 'write' visual material, but the original statement of visual literacy traced its backgrounds to general semantics, structural linguistics, transformational grammar, and Murray Turbayne's *The Myth of Metaphor* (Debes, 25). What these separate strands share is a generic semiotic belief that the world consists largely of entities without independent meaning, that the meanings these entities have for us is conferred on them by the act of interpretation, and that these entities are elements in larger systems with their own constitutive grammars. In the case of language, this is the standard modern view. John Debes, to whom we owe the first and fullest definition of visual literacy, simply applied it to the field of vision:

> Visual literacy refers to a group of vision competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. . .When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, and symbols, natural or man–made, that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communication.(27)

The operative comparison in this definition is with language, and more especially with the Chomskyan view of linguistic competence and performance: just as normal humans learn language in the proper environment and are then able to understand it, persons who are visually literate "develop" the competencies for visual literacy in the proper environment, and are then able to use it to interpret future "actions, objects, and symbols." As with language, there is a split between competence and performance, here stated as the distinction between the "competencies" one acquires and the "use" one makes of them. There is even a nod to the oft–mentioned creative aspect of language: one makes "creative use" of the competencies in order to communicate, just as one makes creative use of linguistic competence to produce or understand new utterances.

This definition is excessively general, however, and Debes provided it only after he had specified a hierarchy of 35 skills comprising visual literacy. These skills range from distinguishing light from dark and perceiving motion to the ability to 'read' a sequence of objects or body language as representing a process, abstract idea, fictional narrative, or emotion. Correspondingly, visual literates must know how to 'compose' sequences of objects or body

language to convey processes, ideas, narratives, and emotions (26–27). Summarizing this list (and specifically "drawing on the verbal parallel"), Debes provides half a dozen skills and attributes characteristic of the visually literate:

> To read visuals with skill
> To write with visuals expressing oneself effectively
> To know the grammar and syntax of visual language and be able to apply them
> To be familiar with the tools of visual literacy and their use
> To appreciate the masterworks of visual literacy
> To be able to translate from visual language to verbal language and vice versa (27)

If we substitute 'produce' and 'understand' for 'write' and 'read', the first three skills are in fact quite similar to the skills of the language user: one can produce and understand an unlimited number of utterances in the relevant medium, and does so by means of a system of perhaps only unconsciously known rules. But a closer look suggests that the parallel with language is beginning to break down. First there is the curious doubling of 'grammar' and 'syntax' as if they were independent entities. Then there are the modifiers of each of the skills: one reads "with skill" and communicates "effectively." In linguistic theory, of course, one has the competence to produce or understand an unlimited number of sentences, but whether one does so skillfully or effectively is a question of performance. The fact that competence and performance are here so indissoluably conjoined indicates a conception somewhat different from the linguistic one.

This different conception becomes much clearer in the final three characteristics of visual literacy, which deal with the use made of visual competencies. Familiarity with tools, appreciation of masterworks, and ability at translation are types of knowledge that have no counter-

parts in linguistic theory. They are associated instead with the evaluative sense of literacy, in which one is deemed literate not because one can read and write, but rather because one is well versed in a literary tradition. Thus despite the overt and covert suggestions that 'visual literacy' is based on a "verbal parallel"—the list of influences provided at the beginning of the paper, the parallel with transformational grammar in the definition of visual literacy—it seems that is actually stems, as Debes says, "from the confluence of knowledge, theory, and technology in many areas" (25). Linguistics is certainly one of those areas, as is semiotics (in a rather general sense); but equally important is the evaluative component that may well have derived from common uses of the term 'literacy'. The visual world may indeed be composed of signs, but the aim of visual literacy is not merely to explain the workings of the semiotic system(s) that provide it with meaning; it is to enable people to use those systems for effective communication, to provide a rhetoric of visuality in addition to a grammar of it. And so Debes follows his various definitions of visual literacy with two short anecdotes about students who "wanted to talk, wanted to be understood, felt they could do this visually, and so they leaped at the chance" (Debes, 27).

If these stories clarify the relation between visual literacy and evaluative conceptions of literacy, the questions Debes asks immediately after proposing his definition of visual literacy and the answers he supplies elucidate it still further:

> How can we provide children with learning opportunities that will lead to visual literacy? . . . Out there in society and in the schools a great audience of concerned youngsters is waiting. They know that even though there is much that is right about school, there is also much that is wrong—for some of them terribly wrong. (Debes, 27)

The schoolroom is the only place Debes even considers as providing opportunities for learning visual literacy. And yet most, if not all, members of a society will learn the 35 visual skills comprising visual literacy as they grow up: part of assimilating a culture is learning its kinesics and proxemics. Children will naturally learn how members of their culture express emotions by using body language. What they will not naturally have the opportunity to learn is how to use the various media—film (the medium in both of Debes's anecdotes), videotape, paint, computers—provided by some schools. Nor will they naturally know the "masterworks of visual literacy," let alone appreciate them. In the end, then, Debes is not suggesting knowledge of a semiotic of visual signs so much as familiarity with a particular tradition and technology of visual representation. Again we can see that the basic conception derives from a combination of the evaluative sense of literacy and the emphasis on analysis and inferential reasoning characteristic of the analytic stage of literacy.

Cultural Literacy

As a third (and final) example of the current uses of 'literacy', I would like to consider 'cultural literacy', especially as it has been formulated by E. D. Hirsch, Jr., because this conception seems to derive directly from the descriptive (rather than the evaluative) sense of literacy. "To be truly literate," Hirsch argues, "a high school graduate must be able to grasp the meaning of written materials in any field or subject, provided that those materials are addressed to a general reader. . . .And our high school graduates should also be able to convey information in writing to a general readership. Universal literacy means that every citizen must be able to give as well as receive written information" (1985a, 8). Given this descriptive definition of literacy, Hirsch believes that the national level of literacy has declined, a belief

apparently stemming from two sources. First there are quantitative data, such as NAEP reports and SAT scores (1987, 4–8); Hirsch once called the national decrease in the verbal SAT scores "the chief and decisive piece of evidence" for the "decline in our national level of literacy" (1983b, 160). Second, there is experimental evidence from a number of sources indicating a strong relation between background knowledge and efficiency of reading (1983a, 164; 1985a, 10): "What these experiments demonstrate," Hirsch argues, "is that the idea that reading is a general, transferable skill unrelated to subject matter is essentially wrong. . . .Reading is a general skill only with regard to its rather elementary aspects, those involving phonics, parsing strategies, guessing strategies, eye habits, and so on. . . Reading skill varies from task to task, because reading skill depends on specific background knowledge" (1985a, 10). Those who lack the background a particular passage assumes will be ineffective readers and thus illiterate in the descriptive sense: they will be unable to derive information from their reading.

In Hirsch's view, there are thus two components to reading: what he calls the "elementary aspects" of decoding the text, and the more advanced abilities of comprehending the text by using background knowledge. This background knowledge required to comprehend texts is "cultural literacy": "It is the translinguistic knowledge upon which linguistic literacy depends. You cannot have the one without the other" (1983a, 165). Someone incompetent in either the linguistic or the cultural component of literacy is thus to some extent illiterate: "Illiteracy, then, is not merely a deficiency in reading and writing skills. It is also a deficiency in cultural information" (1983b, 147). If literacy requires "translinguistic knowledge" and "cultural information," what seemed to be a purely descriptive conception of literacy has very quickly become an evaluative one, based on the mastery of a traditional body of knowledge.

Hirsch distinguishes two kinds of necessary cultural information: extensive and intensive. Extensive knowledge, which seems to be the central component of cultural literacy, "tends to be broad, but superficial. It is learned by rote. It is mainly enumerative. It consists of atomic facts and categories. It does not put things together" (1985a, 12). As a demonstration, these facts and categories are indeed enumerated in the Appendix to *Cultural Literacy,* which provides a list of about 5000 items representing a preliminary attempt to specify "What Literate Americans Know." This list consists of people, places, dates, and things—seas, mountains, continents, countries, states, personages historical and fictional, sayings, scientific terms, and abbreviations. The title of the list—"What Literate Americans Know"—is perhaps too enthusiastic, since what we have is merely a checklist of cultural literacy: Hirsch explains that a complete dictionary would consist not only of the words and phrases literate Americans recognize, but also of the associations they elicit. This naturally presents problems, since it isn't at all clear what associations 'truly literate' people share, and it isn't clear how—short of a massive research project—to find out. As an example, Hirsch wonders how many of the following associations should be listed for Lincoln:

> Gaunt face with a beard; log cabin; Honest Abe; debates with Douglas; Gettysburg Address; stovepipe hat; Emancipation Proclamation; "With malice toward none, with charity for all"; John Wilkes Booth; "Tell me what brand of whiskey Grant drinks, so I can get it for my other generals"; "One aye, seven noes, the ayes have it." (1987, 139)

A second problem raised by the associations is that the information they represent modulates into the other kind of knowledge Hirsch distinguishes, intensive knowledge. This consists of "understanding how to put things together. . .if we want to make isolated facts fit together in some coherent way, we must acquire models

of how to do so from detailed, intensive study and experience" (1985a, 13). Such mental models form the basis of schema theory, which argues that one understands new experiences by relating them to previously existing mental models, or schemata (Schank and Abelson; Hirsch 1987, 33-69). To comprehend a passage about a wedding, for instance, a reader must have a mental model of a wedding which serves to organize, by explaining the significance of, the actors, actions, and props mentioned in the passage. And it has to be the kind of wedding described in the passage: in one study, American readers understood a letter about an American wedding better than one about an Indian wedding, while Indian readers did just the opposite (1985a, 10; 1987, 17-18).

Understanding the associations to the contents of cultural literacy requires these mental models. Consider again Lincoln's remark about Grant. To understand it, one has to know who Grant was, the situation he was in, and traditional physiological and cultural reactions to whiskey. None of this is easily accessible in list form; one has to have mental models of warfare, the responsibilities of a general, and the situation in the Civil War to explain it. And these models have to be relatively specific: notice how different the situation would have been if Grant had not been a general fighting a war, or if he had not been successful where other generals, more abstemious, had not, or if he had been a Confederate general, or if the liquid in question had been lemonade, or if the whiskey had been for the troops rather than for the general. Understanding the extensive contents of cultural literacy thus requires a comprehensive network of intensive models, something Hirsch notes in passing but underestimates (1987, 127-30).

Schema theory reminds us of another aspect of the argument Hirsch seems to have overlooked. Although he mentions in passing the utility of schemata in understand-

ing generally (e. g. 1987, 51), his concern is with reading, and he thus underemphasizes the point that schemata are necessary for all acts of comprehension, whatever the modality. If one cannot sensibly read a letter about an Indian wedding, one could not sensibly understand an oral account of it, and one could not understand it if witnessed in person. That is, insofar as schema theory is applicable, it has nothing particular to do with 'literacy' and everything to do with understanding in general. It is relevant for reading only because we expect readers to comprehend what they read (unlike the signature or recitation stages of literacy), and that comprehension requires schemata.

To sum up: the intensive aspect of cultural literacy is of fundamental importance for reading proficiency: without fairly detailed knowledge about Grant and Lee, Grant and Lincoln, marriage customs, or any other conceivable topic, readers will have trouble reading about them. In this sense, however, cultural literacy is merely a new term for acculturation, with all the problematic political and practical ramifications of the earlier one (Edwards; Ohmann: 1985b; Warnock). The contribution of the extensive aspect of cultural literacy to reading proficiency is much more problematic, since it obviously depends on what the requisite associations for each entry in the list are and where one draws the line between extensive and intensive knowledge. Among the contents of cultural literacy are names of oceans, mountains, and patriotic songs. If extensive knowledge of them merely requires recognizing that they are oceans or mountains or patriotic songs, then it is difficult to conceive of a situation in which ignorance of them would seriously degrade reading comprehension. If, on the other hand, extensive knowledge means knowing, for instance, what "Yankee Doodle" and "Columbia, the Gem of the Ocean" are about, then it is relatively easy to see how ignorance could affect reading. But then the knowledge required

seems more intensive than extensive. Extensive knowledge, taken by itself—if that is even possible—thus seems unlikely to improve reading: it is more a newer version of Trivial Pursuit than anything else, and the popularity of that game may have contributed, at least partially, to the widespread interest in the book. Despite the initial appearance that cultural literacy is related to the descriptive sense of 'literacy', then, the aspect of the concept that is actually effective in improving reading is clearly based on the mastery of a body of knowledge, and thus derives from the evaluative sense of 'literacy'.

Cultural literacy, visual literacy, scientific literacy, and the other varieties represented on the list at the beginning of this paper thus have less to do with the ability to read and write than with the background information necessary to comprehend experience in a particular sphere. And this seems to be true even in those cases where authors have specifically tried to relate their extensions of the term 'literacy' to its descriptive sense. The reasons for this seem to be inherent in the meanings of 'literacy' itself: once one takes the term in either of its modern descriptive senses, one is necessarily dealing with comprehension, and comprehension requires previous knowledge. New experiences of any sort are assimilated by relating them to mental models based on previous experiences; something that is totally novel is incom-prehensible. Knowledge is thus an essential component of even the descriptive sense of 'literacy', and this leads, almost inevitably, to knowledge as the defining characteristic of the evaluative sense. And thus the title of this paper.

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Speech and Writing in Poetry and Its Critic

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Speech and Writing in Poetry and Its Criticism

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Abstract

This paper examines some of the ways in which literary criticism simultaneously exploits and marginalizes the poem as printed artifact. It argues that the author-centered, phonocentric premise of close reading is employed to neutralize the spatial dynamics of poetic language and reduce the material identity of the text to the status of a transparent medium. This relationship between criticism and poetry is maintained from the Eighteenth Century to the Twentieth. The paper examines the tension between the aural and the visual in modernist theory and practice and contends that the appreciation of silent visual form has become one of the conventions of post modernist writing.

Poetic Meaning: by ear or eye

The phrase 'reading poetry' reverberates with ambiguity. When removed from a specific context, 'reading' unwraps itself into such disparate processes as reciting, hearing, interpreting and criticizing. The principal distinction is between the reader's role as passive or active in relation to the printed poem: do we allow the poet to speak to us via the silent record of the printed page, or do we regard the silent text as a series of signals from which alternatives, either in spoken performance or critical analysis, may be generated?

John Hollander's essay 'The Poem in the Eye' is an ingenious reinterpretation of the Horatian tag, ut pictura poesis. He rewrites the line: 'A poem's shape, then, may be a frame for itself as it may be a frame for its picture of the world'. [1] Hollander's analogy with the visual arts is at once deceptive and convenient, because at one point in the essay he suggests that hearing and seeing poems are separate engagements, analogous to the Saussurean division of language into a system of differences and speech events. 'It is on the second of these axes that I would pose the ear, the individual talent, the voice, the parole; on the first are ranged the eye, the tradition, the mask through which the voice sounds, and the langue. The ear responds to the dimension of natural experience, the eye to that of convention' (p. 248). It is here that we find a potential contradiction, because some of Hollander's most striking critical insights depend primarily upon the eye to identify effects such as enjambment, where syntax crosses the line ending without a grammatical break. This would not necessarily be heard in verse where aural signals such as rhyme or rhythmic inversion are absent or ambiguous. To claim that these effects of lineation become evident when the poem is recited by the kind of reader who is fully aware of the 'conventions' of the 'mask' is to tacitly acknowledge the dependence of that reader upon the visual shape of the text. 'The mask through which the voice sounds' is a rather more refractory medium than Hollander

would have us believe, because unless our final point of assurance is a recording of the poem as recited by its creator, the *voice* is ours.

To privilege the spoken poem by regarding the typographic object as a mere pragmatic necessity is a tendency endemic both to literary criticism and to the ex-cathedra theorizing of poets. It takes us back to the Hellenic, pre-Gutenberg, ideal of one person literally speaking to another. The printed poem is regarded as a kind of objectified memory, which preserves the original intentions of the poet. Oral readings and critical analyses which are divergent and occasionally contradictory are usually explained as being the product of misinterpretation or extended ingenuity on the part of the performer or the critic, but one must ask the question why a resolution of these in the identification of a single authoritative *voice* never takes place? In what follows I shall argue that in poetry such as blank and free verse the interplay between the 'mask' of the visual text and the mind of the reader has effectively superseded the ideal of the poem as a medium through which the absent poet speaks to us. I shall attempt to demonstrate that traditional critical techniques often exploit the purely typographic status of poetry to the extent that it is the silent written text as the voice behind the mask which produces meaning.

The poetic line is the most significant unit of poetic grammar in the sense that it continuously interacts with the conventional syntactic patterns of language, and the effects produced when syntax crosses the 'white space' of the right hand side of the poem have consequently attracted the attention of such critical practitioners as Hollander, Donald Davie, Christopher Ricks and Stanley Fish. [2] Enjambment is generally recognized as an element of poetic language which produces ambiguity, and the critic will recognize it as a physical and thematic opening of the text which may be closed by its relocation as part of a richer and more complex meaning—a practice which adds a sophisticated dimension to the phrase 'reading between the lines.'

A celebrated instance of this occurs at the beginning of Wordsworth's 'Tintern Abbey':

> Once again
> Do I behold these steep and lofty cliffs,
> Which on a wild secluded scene impress
> Thoughts of more deep seclusion; and connect
> The landscape with the quiet of the sky.
> (1798, lines 4–8)

Isobel Armstrong and Antony Easthope note that there are crucial ambiguities at the terminal words 'impress' and 'connect'.[3] 'Connect' could refer to an unbroken unity of panorama, 'the cliffs connect the landscape to the sky', and it could also refer to the process of mediation, 'I connect the landscape with the quietness of the sky'. Similarly with 'impress' there is a momentary hesitation between the cliffs literally impressing upon the landscape (a typical Eighteenth Century inversion), and the revelation that the cliffs impress 'thoughts of deep seclusion' upon Wordsworth himself. Both commentators identify these ambiguities as syntactic, Armstrong proposing the text as an example of the tendency of Romantic syntax to effect 'transformations in preception and relationship' (p. 263) and Easthope as an example of parataxis, 'the juxtaposed syntax of speech' (p. 127). What both share is an implicit belief in the poem as speech act, whether reified into the protocols of Romantic epistemology or mimetically enacting the slippages and hesitancies of the speaking voice. But in a purely oral sense the poem is unreadable. It would be quite possible for a performer to reproduce the hesitancy at 'impress' by pausing slightly and then moving on to reveal the rest of the syntactic unit, but in order for the listener to resolve the ambiguity he must refer to an entirely different reading, the prosaic, where the 'natural' pause falls *before* impress. 'Connect' is more problematical; there is a genuine syntactic confusion concerning the subject of this verb, but, again, without the

spatial gap which follows it the listener would more readily identify the subject as the cliffs because of the grammatical continuity established by their relationship with 'impress'. There can never be a single self–sufficient oral performance of these lines which would produce the contrapuntal shifts of meaning identified by criticism. The syntax of the lines is, itself, relatively unambiguous; the traps, invitations to premature conclusions and textual gaps are imposed upon it by typographical disposition. The synthesis of aberrant readings can only take place in the silent realm of analysis: in oral performance they must remain separate. Thus if this repertoire of effects is said to inhere in the text, if the final readable text is regarded as containing within itself these semantic enrichments, then its essential ontological status must be a function of its visual identity.

Saussure's *langue et parole*

Hollander's analogy between ear/eye and *langue/parole* is clearly based upon an analysis of language which derives from the work of Ferdinand de Saussure. In his *Course in General Linguistics*[4] Saussure distinguished between the *langue* as the system of impersonal rules and conventions which controls language as a whole and the *parole* as the actual manifestation of this system in individual constructions or utterances. His most specific, and famous, description of the workings of the *langue* is in the statement that, 'in the linguistic system there are only differences, *without positive terms*' (*Course*, p. 120). The rather sinister implication that language is an entirely autonomous differential system of arbitrary signs is suppressed by Saussure's distinction between the terms 'signifier' and 'signified'. Signifiers are linguistic signs, words, separately identifiable by their difference from one another; but beyond this they are capable of providing access to intelligible signifieds, the elements of reality outside language which language articulates. Most importantly

Saussure makes this point by asserting that the primary object of linguistic analysis is speech, where signified and signifier seem spontaneously fused, rather than writing which is at the prey of absence and anonymity (*Course*, pp. 23–24). Just as Saussure created his hierarchy of speech/writing to support the presence of individual meaning and intention so Hollander has to categorize the effects he identifies as the products of speech rather than writing, or more importantly, the products of the author rather than of a system of literary conventions.

Derrida on Saussure

In recent years Saussurean linguistics has been subjected to a variety of theoretical questions and speculations. The most penetrating and subversive of these occur in the work of Jacques Derrida. In *Of Grammatology* [5] Derrida examines the interplay of concepts of speech and writing in the work of Saussure, and in a number of texts by Plato, Rousseau, Husserl, Levi Strauss and Condillac which he regards as indicative of the dominant Western tradition of linguistic thought. Derrida traces a tendency in Saussure's *Course* towards 'phonocentrism' in which speech is regarded as the communicative ideal where words issue from the speaker as the spontaneous and nearly transparent signs of his present thought.[6] But Derrida suggests that this ideal is, as it emerges in the work of Saussure and others, self contradictory, and that writing, which is traditionally regarded as a derivative and parasitic mode of communication, is in reality a much more powerful element. 'If "writing" means inscription and especially the durable instituting of signs (and this is the only irreducible kernel of the concept of writing) then writing in general covers the entire domain of linguistic signs . . . The very idea of institution, hence the arbitrariness of the sign, is unthinkable prior to or outside the horizon of writing'.[7] This represents only one aspect of Derrida's approach, but it is important to the subject of

this essay. If, as Derrida argues, writing, as the only means of *preserving* meaning, is a more dominant signifying category than evanescent speech, then a question must be asked about critical approaches which refuse to acknowledge that the written rather than the supposedly original spoken poem contributes to the elucidation of meaning. In the second part of this essay I want to look at some statements, mostly by poets, about how poetic structure is supposed to *convey* meaning, and to examine the way that criticism whilst apparently in complicity with these beliefs is, in its dealings with visual structure, capable of *generating* meanings.

The history of the sort of criticism which recognises the written text as more than a transparent medium for the 'voice' of the poet provides instructive examples of the simultaneous tendencies to generate meaning from that text and establish them as properties of it. *Paradise Lost* offered a challenge to the reading practices and formal expectations of the Eighteenth Century because its unrhymed enjambments engaged a convention of reading, the acknowledgement of the poetic line as a formal effect, without satisfying the criteria on which that convention operated; many lines could be seen but not *heard* as discrete units.[8] Thomas Sheridan, in *Lectures on the Art of Reading* (1775), attempted a solution by proposing that the spatial gap at the line ending was a signal, inserted by Milton, of an extra–grammatical intrication of meaning capable of generating textual depth; in effect a key to unlock hidden meanings *inherent in* the spoken poem and located *through* the written text.[9] Sheridan's naturalization of the visual status of the poetic line as a function of the structure of the original oral poem has become quietly institutionalized in the reading strategies of the past two hundred years. In a 1785 essay by Thomas Barnes, the assimilation of Sheridan's reading to the contemporary attitude to the written poem is acknowledged, 'But when

read with the eye only, without the accompaniment of the voice, there is a *fainter association* of the sound, the *shadow of the music*, as it were, connected with the words; so that we can judge exactly of the composition as if it were audible to the ear'.[10] Official critical history rarely tends to interrogate those assumptions which establish its relationship with literary texts and Sheridan is usually presented as a marginal figure, but it is worth noting that his directions for reading verse were adopted verbatim by Lindley Murray in his *English Grammar* (1795), the most widely used and adapted pedagogical work of its type of the subsequent century.[11]

It is also worth noting that Sheridan's method of elucidating blank verse has been very precisely employed in the work of John Hollander and Christopher Ricks.[12] At one point in Ricks's *Milton's Grand Style* there is a moment of potential contradiction. Ricks comments on the 'fluidity' of Milton's syntax and refers to the following line (p. 81):

> all things smil'd
> With fragrance and with joy my heart oreflow'd
> (VIII 265–6).

He quotes the Eighteenth Century critic Jonathan Richardson, who noted that the phrase 'with fragrance' can be read as both a reference to the 'fragrance' of 'all things' and as the 'fragrance' which 'oreflowed' from Adam's heart. Ricks agrees with Richardson and goes further by suggesting that there are at least four variations in syntactic structure.

> Milton's line and a half can be divided in many ways, the sense varying minutely each time:
>
> 1. All things smil'd
> With fragrance and with joy my heart oreflow'd

2. All things smil'd with fragrance
   And with joy my heart oreflow'd
3. All things smil'd with fragrance and with joy,
   My heart oreflow'd
4. All things smil'd
   With fragrance and with joy,
   My heart oreflow'd

It is Ricks's briefly self–conscious reference to his own critical practice which is most interesting. 'Not that we need to break the verse down like this in reading—its flow keeps us moving' (p. 82). Does the term 'reading' mean silent critical interpretation or oral delivery? He does not say which because, as with 'Tintern Abbey', the one excludes the other. The four shifts in emphasis are convincingly illustrated by Ricks's typographic experiment, but it is difficult to imagine that all of these rhythmic and syntactic arrangements could be delivered in a single vocalization. Ricks seems to be aware of the signifying properties of typography, but he does not regard them as Miltonic: 'E.E. Cummings might achieve such effects through typography and punctuation—Milton uses syntax' (p. 90). It is strange that Ricks has used 'typography' and 'punctuation' in his rewriting of Milton to illustrate the apparently quite different qualities of 'syntax'. Jonathan Culler in *Structuralist Poetics* rewrites a prose sequence from a philosophic treatise by W.V.O. Quine as adventurously spaced free verse and effectively interprets it as a lyric on paradox.[13] And Stanley Fish in *Is There a Text in This Class?* relates an amusing anecdote on how his students explicate the stylistic and referential identity of a modernist religious lyric which is (unknown to them) a list of the names of modern American linguists left on the blackboard from the preceding seminar.[14] It would seem from these cases that the silent generation of meanings from the printed text is acknowledged or ignored according to context: Milton uses syntax but the modernists use typography. I would argue that the context is defined by the interpretive strategies of the reader,

and the function of shape and typography in this definition was considerably increased by the destabilization, begun by the Imagists, of the previously established relationship between the structure and the meaning of a poem.

The idea that the structure of a poem is in some way organically produced by its prelinguistic genesis in the mind of a poet appears in the work of theorists as diverse as John Dennis, Blake, Coleridge and Whitman,[15] but in Imagist poetic theory the poem itself is identified almost as a recording of the spontaneous contingencies of an original oral event. In a letter to Harriet Moore, Ezra Pound reveals a near obsessive preoccupation with the need to break away from the complicit structures of abstract form, tradition, writing.

> Rhythm MUST have meaning. It can't be merely a careless dash off, with no grip and no real hold on the words and sense, a tumty tum tumty tum tum ta. . .Every literaryism, every book word, fritters away a scrap of the reader's patience, a scrap of his sense of your sincerity. When one really feels and thinks, one stammers with simple speech; it is only in the flurry, the shallow frothy excitement of writing, or the inebriety of a metre, that one falls into the easy—oh, how easy!—speech of books and poems that one has read.[16]

The 'easy speech' of books and poems is the tainted and codified written text threatening the purity and transparency of the poet's voice. The problem to which Pound and the Imagists continually return is that of how to maintain the effect of organic form and spontaneity when the poem must function in the absence of the poet, its anonymity displacing the moment of origin and allowing in aberrant reading strategies based on the 'speech of books and poems'. The basic formal unit of the poem, the line, was defined by Amy Lowell as a 'cadence' a 'rhythmic curve. . .corresponding roughly to the necessity of

breathing'.[17] The possibility that such a correspondence, when transformed into silent spaces on the page, might produce effects not intended by the poet is sidestepped by a rhetorical effacement of the written text as intermediary between poet and reader/listener. This is from the Preface to *Some Imagist Poets 1916* which Amy Lowell edited.

> But one thing must be borne in mind; a cadenced poem is written to be read aloud, in this way only will its rhythm be felt. Poetry is a spoken and not a written art. . .It is not a question of rules and forms. Poetry is the vision in a man's soul which he translates as best he can with the means at his disposal.[18]

It is odd that this ideal of unmediated poetic expression is so closely bound up with orality when the text which Hugh Kenner called 'the *Ars Poetica* of our time' focuses upon nonphonetic pictorial language. Ernest Fenollosa's *The Chinese Written Character as a Medium for Poetry*[19] was so attractive to Pound and later practitioners of the modernist poetic because of its explication of the Chinese written sign's apparent capacity to represent images, metaphors and natural processes whilst by–passing the systematic, logical protocols of Western language.

> A true noun, an isolated thing, does not exist in nature. Things are only the terminal points, or rather the meeting points of actions, cross sections cut through actions, snap shots. Neither can a pure verb, an abstract motion, be possible in nature. The eye sees noun and verb as one; things in motion, motion in things, and so the Chinese conception tends to represent them.
>
> The sun underlying the bursting forth of plants=spring. The sun sign tangled in the branches of the tree sign=east.

'Rice–field' plus 'struggle' = male.
'Boat' plus 'water', boat water, a ripple (p.141).

The problem with Fenollosa's concept of poetry is that of transferring the compression and economy of the ideogram to the subject/object matrix of the sentence. The term 'juxtaposition' is often applied to Pound's poetry, especially the *Cantos;* it implies that the static, spatial relationships of the ideogram can be reproduced by in some way compromising the temporal, sequential nature of the sentence, and indeed there is an analogy to be drawn between Fenollosa's explication of the ideogram and the way in which we may be said to understand the 'juxtaposed' or 'ideogrammic' method in English. Fenollosa renders Chinese characters intelligible to the non–Chinese reader by breaking them up, literally, 'explaining' them in terms of the linguistic system to which they are opposed. Similarly, to understand a juxtaposed poem, such as the Imagist prototype for the *Cantos,* 'In a Station of the Metro', one must recognise the syntactic discontinuity between the two lines and give it thematic value.

The apparition of these faces in the crowd;
Petals on a wet, black bough.

To grasp any potential effect of the profundity of superficial perception, the sentence without a verb must be understood as a version of, a withdrawal from, a normal sentence; a notional verb must be inserted to make the effect possible. The 'meaning' of the poem, in the sense that criticism would regard it as being in some way concerned with perception, must be rendered in terms of the oral, sequential language which it seeks to disrupt. Thus, like the blank verse enjambments considered above, the oral poem which is performable and which contains the sum of the meanings inherent in the written text is something quite separate from the written text itself. But Pound, recalling Lowell, identifies the written text as tras-

parent, its visual identity a mere paradigm of the process of oral transmission. 'All typographic disposition, placing of words on the page, is intended to facilitate the reader's intonation, whether he be reading silently or aloud to friends'.[20]

Writing and speech

This tendency to reduce writing to a function of speech is characterized by Derrida as a will to preserve the ideal of unmediated expression. He quotes Hegel, '. . .the visible language is related only as a sign to the audible language; intelligence expresses itself immediately and unconditionally through speech', and comments, 'What writing itself, in its non–phonetic moment, betrays is life. It menaces at once, the breath, the spirit, and history as the spirit's relationship with itself' (*Of Grammatology*, p. 25). What is menaced is, in Lowells words, the 'translation' of 'the vision in a man's soul'. In the third chapter of *Of Grammatology*,'Of Grammatology as a Positive Science', Derrida postulates a 'necessary decentering', a 'dislocation'' of 'the founding categories of language', 'through access to another system linking speech and writing. . .This is the meaning of the work of Fenollosa (sic) whose influence upon Ezra Pound and his poetics is well known: this irreducibly graphic poetics was, with that of Mallarmé, the first break in the most entrenched Western tradition' (p. 92). This 'poetic' reflects, in its obsessive shifts between the graphic and the phonetic, the eye and the ear, not a break with the 'Western tradition' of the priority of speech but a relocation of that tradition in the relationship between text and interpretation. The 'tradition' found itself capable of adapting its interpretive techniques to accommodate 'nontraditional' writing. But there has hardly been a more vigorous attempt to distance the 'poetic' from the 'tradition' than in Charles Olson's essay 'Projective Verse',[21] a work which revived Poundian modernism in the midst of the New Critical atmosphere of 1950.

Olson's 'Closed' and 'Open' poetry

Olson's crucial distinction is between 'closed' and 'open' poetry. 'Closed' poetry is 'print bred', 'the lyrical interference of the individual as ego', frozen in the abstract formulae of metre and rhyme—in other words the greater part of poetry written before the Twentieth Century. Olson's attitude to 'closed' poetry is an extension of Fenollosa's perception of the infelicitous tendencies of Western language, that the conventions of the medium itself absorb and restructure the relationship between the individual and reality. According to Olson the formal protocols of the 'closed' lyric reify and delimit any genuine attempt at communication between poet and reader, so that the original subject and object, the poet and the world, are transformed into grammatical, stylistic categories. 'Projective Verse' is really a manifesto for 'open' poetry, a term undoubtedly connected with Fenollosa's vision of an escape from the tyranny of 'closure' in the sentence: 'All processes in nature are inter–related; and thus there could be no complete sentence. . .save one which would take all time to pronounce' (Fenollosa, p. 142). Olson wants to re–establish in poetry what he sees as a primal link between language, perception and thought. He begins by attempting to reduce the differential structure of language to single discrete and indivisible sound particles. 'Let's start from the smallest particle of all, the syllable. It is the king and pin of versification, what rules and holds together the lines, the larger forms, of a poem' (p. 17). The syllable in this scheme is the key mediating component, that which establishes a non–arbitrary link between the process of perception and ratiocination and the generation of linguistic sequence and aesthetic organization.

> Let me put it baldly. The two halves are:
> The HEAD, by way of the EAR, to the SYLLABLE
> The HEART, by way of the BREATH, to the LINE
> (p. 19).

The poet must, it seems, respond to the dynamics of phenomena rather than impose upon it the falsifying strictures of closed form. 'From the moment he ventures into FIELD COMPOSITION—put himself in the open—he can go by no track other than the one the poem under hand declares, for itself. . .FORM IS NEVER MORE THAN AN EXTENSION OF CONTENT' (p. 16).

In attempting to synthesize the diverse and often contradictory elements of the modernist tradition (he acknowledges Pound and Williams as his precursors) Olson performs what could be, in Derridean terms, a self–deconstructive move. It is, at least, self contradictory. He simultaneously celebrates and marginalizes the material status of language. The poem is proposed as a transparent representation of the response of the poet to the world, yet it is the poem's status as a physical artifact, as a sequence of phonetic integers, or an arrangement of black marks on paper, which is supposed to produce the economy of this mediation.

> . . .every element in an open poem (the syllable, the line, as well as the image, the sound, the sense) must be taken up as participants in the kinetic of the poem just as solidly as we are accustomed to take what we call the objects of reality; and (that) these elements are to be seen as creating the tensions of a poem just as totally as do those whose objects create what we know as the world. (p. 20).

Breathing and Typewriting

That most tangible constituent of the poem's identity, the line, becomes a funciton of the poet's interaction with his environment. 'And the line comes (I swear it) from the breath, from the breathing of the man who writes, at the moment that he writes, and thus is, it is here that, the daily work, the WORK get in, for only he, the man who writes, can declare, at every moment, the line its metric

and its ending—where its breathing shall come to, termination' (p. 19). The manuscript and printing press have, according to Olson, removed verse 'from its place of origin and its destination'; he believes that the traditional metrical line was petrified by print into a barrier between poet and reader. His solution is provided by more recent technology, the typewriter, which:

> due to its rigidity and its space precisions, it can for a poet indicate exactly the breath, the pauses, the suspensions even of syllables, the juxtapositions even of parts of phrases, which he intends. For the first time the poet has the stave and the bar a musician has had. For the first time he can, without the convention of rime and meter, record the listening he has done to his own speech and by that one act indicate how he would want any reader, silently or otherwise, to voice his work (p. 27).

The typewriter with its apparent ability to reproduce the breath, the inspiration of the poet, would preserve the moment at which material signifier and spiritual signified seem presented as an undissociated unity. Olson's desire to record the 'listening he has done to his own speech' corresponds to the effect identified by Derrida, with the French verb *s'entendre parler*, ' "hearing/understanding—oneself speak" through the phonic substance—which *presents itself* as a nonexterior, nonmundane therefore nonempirical or noncontingent signifier. . .' (*Of Grammatology*, pp. 7–8). But it is the evanescence of the signifier in speech which creates the impression of immediate access to a signified, the suppression of difference. Once the typing stops, what Olson calls the 'kinetic' of the poem becomes stasis, that set of spaces gaps and discontinuities which are themselves meaningless until thematized or naturalized by the process of interpretation.

It is not my intention to destroy Olson's theory of poetic communication in order to propose an alternative. But

Olson's essay, in its attempt to subsume the material identity of language, and especially its written identity, beneath a phonocentric ideal of presence, presents a powerful yet familiar instance of self contradiction. He refuses to accept that the interpretive conventions of reading poetry are themselves purposive accumulators of meanings which cannot be assumed to have been transferred directly through the medium of poetic structure. The fact that such conventions do operate within the institutionalized relationship between poetry and interpretation is illustrated in the work of John Hollander. Olson refers to 'Cummings, Pound and Williams' as poets who have 'already used the machine as a scoring to (their) composing, as a script to its vocalization' (p. 22). One of William's most famous typographically 'scored' poems is 'The Red Wheelbarrow'.

so much depends
upon

a red wheel
barrow

glazed with rain
water

beside the white
chickens [22]

Hollander has explicated the poem:

. . .The line termini cut the words 'wheelbarrow' and 'rainwater' into their constituents, without the use of hyphenation to warn that the first noun is to be part of a compound, *with the implication that they are phenomonological constitutents as well.* The wheel plus the barrow equals the wheelbarrow, and in the freshness of light after the rain (it is the kind of light which the poem is *about*, although never mentioned directly), things seem to lose their compounded properties.[23]

Hollander's ingenious interpretation is an eloquent commentary on the gap between what a poem is generally held to be and how it is understood. Olson, the spokesman for the modernist program, writes of this sort of poem as having 'the reading its writing involved, as though not the eye but the ear was to be its measurer, as though intervals of its composition could be so carefully put down, as to be precisely the intervals of its registration' (p. 23), yet Hollander exploits the spatial rather than the temporal relationships within the poem to tell us, quite persuasively, that it is 'about' something which it never mentions.

A consistent application of Hollander's interpretive technique would have the 'white/chickens' turned into an Impressionist blur, but to shift the linguistic balance between a color and its object involves a process quite different from that used by a painter. In his *Elements of Criticism* (1762) Lord Kames objects to division of 'phenomenological constituents' when their linguistic components are separated by formal elements such as printed poetic lines. 'Colour, for example, cannot be conceived independent of the surface coloured. . .' (Vol. II, p. 130). Kames's anxiety about language coming adrift from things was fueled by such lines as the following from *Paradise Lost*.

> Now in loose garlands thick thrown off the bright
> Pavement
> III, 362–362.

Thomas Sheridan (1775) provides an elaborate, readerly solution to Kames's objections:

> . . .now here by finishing the verse with the adjective *bright*, it is separated from its substantive, *pavement*, contrary to the genius of our tongue. And yet in the right manner of re-

> peating it, there appears to be no defect, but rather the idea seems to acquire a new force from this very circumstance. . .But this separation in point of sound between the quality and its subject, gives time for the quality to make a stronger impression on us; and therefore should never be used, but when the poet means that the quality not the subject, should be the principal idea; which is the case in the above instance, wehre the intention of the poet is, to fix our thoughts, not on the pavement itself, but on the brightness of the pavement.[24]

Sheridan is remarkable in that, two hundred years prior to their modernist emergence, he manages to preempt the assumption of Olson and Hollander that what is generated by the spatial configurations of the text provides access to an oral event, an original intention behind it. Sheridan, Hollander, and Olson share a belief in the status of the visual format as a form of written music, capable of transferring a number of, sometimes complex and subtle, effects from the mouth of the poet to the ear of the reader. But it has already been shown that in certain cases when the typographic device is fed through the system of critical response the result can be an effect which is only appreciable in the silence of close reading.

Silent Poetics

There would seem to be an unacknowledged tension between the sophistications of critical reading and the still popular ideal of the poem as the archetype of spoken communication. I have so far attempted to trace the implications of this conflict through the *ex cathedra* reflections of poets and the explanatory work of critics, but it could also be argued that poems themselves have been instrumental in actually promoting the sense of instability which is reflected in the work of Hollander and Sheridan. Whether or not Milton and Wordsworth *intended* to cause us to consider the discontinuity between

seeing and hearing a poem will remain a matter for speculation, but it is certainly the case that within the modernist tradition of technical experiment there have been many instances of the visual format being employed as a major element of the poem's structure.

Much of e.e. cumming's poetry exploits the mediating function of print by making the materiality of language the theme as well as the functional condition of the poem. Many of cummings's poems cannot be read aloud; nor can they be converted into an interpretive strategy which supercedes their visual identity. '57' from the collection *73 Poems*, is concerned with the mediation of the sort of perceptual effects Hollander identifies as the theme of 'The Red Wheelbarrow'.

57

mi (dreamlike) st

makes big each dim
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ve turns obv

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o s
trange

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til o
urselve
s are

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(magi
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ally)

ids.[25]

This poem is 'about' the effect of mist upon the perception and the imagination, but its repertoire of effects can hardly be mirrored in sequential interpretative language. It would be very difficult to describe the order in which things happen in the poem because the referential function and material identity of the language are so closely meshed. In regarding 'mi (dreamlike) st' and 'turns/obv/ious/t/os/trange' as meaningful at all we must place them in the same formal context as Wordsworth's 'impress/Thoughts', but we must also ask the question of whether cummings has overexploited a minor stylistic precedent or whether his work stands within a tradition acknowledged by Samuel Johnson's judgment of *Paradise Lost* as 'verse only to the eye'. [26] I believe that the latter must be accepted as the case, because it is no longer possible to dismiss explicitly visual texts such as Herbert's 'Easter Wings' or more recent experiments in Concrete Poetry merely as bizarre aberrations. They represent the most conspicuous manifestations of a trend which is firmly established within 'traditional' poetry, but which critical writing has been reluctant to acknowledge as a legitimate technique. The technique does not yet have a name, but I offer the term 'silent poetics'. They are silent because they operate in an independent sphere beyond the reach of aural performance. They can be very roughly reproduced in speech, but in this form they would lose their subtly pervasive influence upon the texture of the poem—an interplay which is available *only* to the eye.

It would be impractical for me to attempt to document every instance of this technique in contemporary poetry, but in order to illustrate the extent to which 'silent poetics' have become part of the reflexive conventions of even the most accessible and traditional poetic writing I shall invite the reader to look at a recent piece of work by Hugo Williams, called, appropriately enough, 'Poetry'.

Ten, no, five seconds
after coming all
over the place
too soon,

I was lying there
wondering
where to put the
line–breaks in. [27]

Williams seems to be making an irreverent comparison between whatever the poet might get up to in bed and his difficulties in detaching himself from the relentless mental processes of invention and technical refinement. The problem with such a paraphrase is that once we have reached the phrase 'line–breaks' the preceding references to 'coming all/over the place' and the humorously enjambed 'too soon' begin to resonate with poetic, as well as sexual, meaning.

If the poem were 'heard' rather than looked at it would either have to be rendered as an absurd series of hesitations with a pause at each line break, or as a tediously flat piece of erotic prose. To experience the relentless interplay between sequential language and 'silent poetics' we have to see it on the page.

The poem itself is something of a joke, but its status as such is a token of the visual format as a fully institutionalized element in the available repertoire of poetic effects. Williams' implied assumption that the reader will appreciate his playful interpolation of form into content is itself sufficient to grant the visual format a degree of presence and recognition. Pope's line in *An Essay on Criticism*, 'That, like a wounded Snake, drags it slow length along', involves a very similar acknowledgement of the twelve–syllable Alexandrine. But, unlike Pope,Williams makes a statement *in* poetic language which the critical establishment still finds it difficult to accept: Silent Poetics has

become a convention of poetic writing which continues to elude the methodology of interpretation. It is probably the final point of resistance to the process of demystification by which critical writing has systematically catalogued and colonized the 'language of poetry'. The printed page is its ultimate refuge, and the sense of independence granted by this silent realm is vividly, and literally, illustrated in the following piece of typographic anger by Benjamin Zephaniah.

According to My Mood

I have poetic license, i WriTe thE way i waNt.
i drop my full stops where i like . . . . . .
MY CAPITAL LettERS go where i liKE
i order from MY PeN, i verse the way i like
(i do my spelling write)
According to My MOod
i HAve poetic license,
i put my commers where i like,, ((()).
(((my brackets are write ((
I REPEAT WHen i likE.
i can't go rong
i look and i.c.
It's rite.
i REpeat when i liKE. i have
poetic license!
don't question me???? [28]

Things have changed somewhat since Wordsworth confronted the reader with the question of whether he or the cliffs connected the landscape with the quiet of the sky, but Zephaniah's final line affirms the sense of satisfaction which the unreliability of the printed page grants to both poets.

In 'reading poetry'it should be recognized that the eye has, for some time, been as significant as the ear in the process of appreciation.

Notes

1 In *Vision and Resonance: Two Senses of Poetic Form*, New York: Oxford University Press, 1975, pp. 245-287, 285.

2 Hollander, John. *Vision and Resonance*, pp. 91-116, 245–287; Donald Davie, 'Syntax and Music in *Paradise Lost*', *The Living Milton*, F. Kermode, (ed.) London: Routledge, 1960, pp. 70-84, especially pp. 70–73; Christopher Ricks, *Milton's Grand Style*, Oxford: Blackwell, 1963, especially pp. 40–46, 79–80, 100; 'Wordsworth: "A Pure Organic Pleasure form the Lines"', *Essays in Criticism* 21, 1971, pp. 1–32; Stanley Fish, *Is There a Text in This Class?*, Cambridge, MA, and London; Harvard University Press, 1980, pp. 162–66, 322–37.

3 Armstrong, Isabel: "Tintern Abbey": from Augustan to Romantic', *Augustan Worlds. Essays in Honour of A. R. Humphreys*. J. C. Hilson, M. M. B. Jones and J. R. Watson, (Eds.) Leicester: Leicester University Press, 1978, pp. 261–79; Anthony Easthope, *Poetry as Discourse*, London and New York: Methuen, New Accents Series, 1983, pp. 126–28.

4 *Course in General Linguistics*. Wade Baskin, (Trans.). London: Peter Owen, 1960. First published in French, *Cours de linguistique générale*, Paris, 1916.

5 *Of Grammatology*. Gayatri Chakravorty Spivak, (Trans.). Baltimore and London: Johns Hopkins University Press, 1977. First published in French, *De la Grammatologie*. Paris: Minuet, 1967.

6 Ibid., pp. 34–43.

7 Ibid., p. 44. Also quoted in Jonathan Culler's *On Deconstruction. Theory and Criticism After Structuralism*. London: Routledge, 1983. p. 102.

8 See Richard Bradford, '"Verse Only to the Eye?" Line Endings in *Paradise Lost*', *Essays in Criticism*, III, 1983, pp. 187–204.

9 *Lectures on the Art of Reading*, Volume II, pp. 193–98.

10 Barnes, Thomas. 'On the Nature and Essential Characteristics of Poetry as distinguished from Prose', *Memoires of the Manchester Literary and Philosophical Society*, I, 1785, pp. 54–1, 69–71.

11 T. S. Omond calls the book 'our principal Grammar'. *English Metrists: Being a Sketch of English Prosodical Criticism from Elizabethan Times to the Present Day*, Oxford: Clarendon, 1921. pp. 107–08. R. C. Alston is, he admits, defeated in his attempt to record all the reprints and new editions of the work. He does, however, find that it had reached its sixty fifth edition by 1871 as well as numerous editions and reprints in the United States and Canada. There were also translations into French, German, Dutch, Swedish, Spanish, Russian and Japanese. Alston, *A Bibliography of the English Language from the Invention of Printing to the Year 1800*, Leeds, J. Arnold and Sons, I, pp. 95, 112–13.

12 See note 2.

13 *Structuralist Poetics, Structuralism, Linguistics and the Study of Literature* . London: Routledge, 1975, p. 162–3.

14 *Is There a Text in This Class?*, pp. 322–37.

15 Dennis, John. Preface to *Brittania Trimphans*, 1704, *The Critical Works of John Dennis*. E. N. Hooker, (Ed.), Baltimore: Johns Hopkins University Press, I, 1939, pp. 374–379; Blake, William. Introduction to *Jerusalem, The Complete Writings*. G. Keynes, (Ed.). Oxford: Oxford University Press, 1966, p. 261. Coleridge, S. T. *Biographia Literaria*, J. Shawcross (Ed.). Oxford: Clarendon, 1954, Chs. XII and XIV; Whitman, Walt. Preface to *Leaves of Grass*, 1855, *Collected Writings of Walt Whitman*. G. W. Allen and S. Bradley, (Eds.). New York: Rinehart, 1965, V, p. 714.

16 Pound to Harriet Monroe, January 1915, reprinted in *Imagist Poetry*, Peter Jones, (Ed.) London: Penguin, 1972, pp. 141–42.

17 'Some Musical Analogies in Modern Poetry', *Musical Quarterly*, 6, 1920, pp. 127–57, p. 141.

18 Reprinted in Jones, pp. 136–40, see pp. 129–40.

19 Edited by Ezra Pound and first published in *The Little Review*, 1919. References from *Prose Keys to Modern Poetry*. Shapiro, Karl, (Ed.). New York: Harper and Row, 1962, pp. 136–55.

20 Letter to Hubert Creekmore, February 1939, in *Ezra Pound*. Sullivan, J. P. (Ed.). London: Penguin Critical Anthologies, 1970, p. 192.

21 First published in *Poetry New York*, III 1950. References taken from *Selected Writings of Charles Olson*. Creeley, Robert (Ed.). New York: New Directions, pp. 15–26.

22 From 'Spring And All', 22, 1923, in *Collected Earlier Poems*. New York: New Directions, 1938.

23 '"Sense Variously Drawn Out": On English Enjambment', *Vision and Resonance*, pp. 91–116, p. 111.

24 *Lectures on the Art of Reading*, II pp. 257–258.

25 *73 Poems by e.e. cummings*, London, Faber and Faber, 1964.

26 *Life of Milton*, p. 193 in *Lives of the English Poets.* , Birkbeck, Hill Oxford, 1905, Volume I. See also, note 8 above.

27 Published in the *London Review of Books*, Volume 10, 22 December 1988, p. 8.

28 Published in *Artrage, Inter–Cultural Arts Magazine*. Autumn 1988, p. 41.

A Verbal and Visual Translation of Mayakovsky's and Lissitsky's *For Reading Out Loud*

Desktop publishing systems offer users flexibility which requires more knowledge than previous experience with the typewriter or wordprocessor provides. As this article demonstrates, the computer does not inherently bestow any aesthetic grace upon computer assisted productions.

VERBAL AND VISUAL TRANSLATION OF MAYAKOVSKY'S AND LISSITSKY'S For Reading Out Loud

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Full understanding of visual poetry created by a linguistically different culture poses particular problems. Translations of selected poems from Vladimir Mayakovsky's For Reading Out Loud (1923) are presented here. In addition, an attempt is made at transposing the visual wordplays found in the original Cyrillic typography into the Roman alphabet. The English reader is able to enjoy the verbal/visual dexterity of El Lissitzky's typographic presentations of Mayakovsky's poems. Analysis of the design process and some historical background provides a context for fuller understanding of Lissitzky's innovative work.

Visible Language, Volume XXII Number 2/3
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El Lissitzky's book design and typographic illustrations and settings for Vladimir Mayakovsky's poems in For Reading Out Loud (sometimes literally translated For the Voice), published in Berlin in 1923, have been studied and revered for their inventiveness by several generations of graphic designers. The physical form of the book is innovative, incorporating the use of the thumb index, with shortened title and visual symbols arranged alphabetically, to enable the reader to find the poems easily and quickly. This is a significant and functional addition to the standard codex book form known for centuries.

The book is of even greater interest typographically. Only a few years after the Italian Futurists had overturned the Latin-based traditions for writing and typesetting literature, especially poetry, and the Dada group in Switzerland and Germany had then thrown out any remaining rules, Lissitzky, from Soviet Russia, used all the resources of the typecase to typeset, to illustrate, and most importantly, to give visual expression to Mayakovsky's words and ideas.

Since the earliest years of the new century, artists in Russia had been aware of the newest artistic developments in Western Europe, through art works brought back, participation in exhibitions and their own travel and study. Art and literature were closely connected in ideas and in personnel. Artists experimented with many of the new ideas, mixed with and reinterpreted through Russian traditions. The work of the Russian Futurists, or Cubo-Futurists as the visual artists were sometimes called, was a synthesis of the two western movements (Cubism and Futurism) in which they perceived similarities. Book design was an area in which the artists and writers were able to collaborate. Mayakovsky was a member of both groups, for as the 'Poet of the Revolution' he wrote verses, but he also wrote the copy for and illustrated many propaganda posters and even collaborated with Rodchenko in advertising work.

The Russian avant-garde was composed of many overlapping groups, whose artistic ideas did not develop in any linear fashion. Rather different members continued to experiment in a variety of directions. Some movements were more Russian than western: Suprematism, first created by Malevitch, was the reduction of painting to geometric shapes, nonrepresentational planes and volumes, and finally without color; the goal was a universally understood expression of feeling. Constructivism, lead by Tatlin, was first a three-dimensional form, concerned with volume more

than plane. As explored further, for some artists it became a working process; others applied its principles to two-dimensional projects for functional as well as expressive goals.

El Lissitzky was trained as an engineer and architect; later he taught at the same school as Malevitch. He evolved a personal synthesis of Suprematism and Constructivism, first explored in paintings and later in his graphic and typographical works. The poster "Beat the Whites with the red wedge" from 1920 and the Russo-Polish war[1], is among Lissitzky's best known works. Other posters, propaganda pieces and publications of the period show that he was employing widely the nonrepresentational shapes, ambiguous and dynamic spatial relationships, experimental typography and symbolic color of his particular synthesis. His experiments in typography involved the mixing of different typefaces, sizes and weights; the setting of words at contrasting and dynamic angles; the sharing of letters between words; the visual emphasis on the initial letter.

Another work can be considered somewhat preparatory to For Reading Out Loud: the book Of Two Squares, designed in the Soviet Union in 1920 but only published two years later in Berlin. This work further develops Lissitzky's visual language of nonobjective but symbolic forms; the typography consists of a variety of typefaces, weights and sizes set at angles to relate to the images, but outside of the square field of the illustrations. The content of the book was a thinly disguised political tale for children. In this book and in For Reading Out Loud Lissitzky is working in a Revoluationary context.

Late in 1922, Mayakovsky came to Berlin to work with Lissitzky on the book of his poems. During the next year that the book was designed and published, Lissitzky wrote about typography:

1. The words on the printed sheet are learnt by sight, not by by hearing.
2. Ideas are communicated through conventional words, the idea should be given form through the letters.
3. Economy of expression-optics instead of phonetics.
4. The designing of the book-space through the material of the type, according to the laws of typographical mechanics, must correspond to the strains and stresses of the content."[2]

For Reading Out Loud is made up of thirteen of Mayakovsky's poems, written at different times in response to different political and personal events. He wrote hymns for the Russian civil war which he called 'marches', and appeals which he called 'commands'. The selected poems, among the most popular of his works, range from revolutionary provocation to humorous descriptions of city life. Because they were frequently quoted, Lissitzky gathered them in a small (7.5 x 5.25 inches, 19x13.5 cm) and easily portable volume with the thumb indexed format to improve accessibility. The title suggests a communal and participatory activity to be associated with the poetry. Alan C. Birnholz adds to this: . . .the size, color, and organization of letters change both to make the book more interesting visually and to push the viewer beyond reading silently to himself and toward declaiming in public. One does not just read these poems; one speaks them out loud and, when the typography suggests, begins to shout as well."[3]

The propagandists for early Soviet Russia attempted to solve the problem of communication with a largely illiterate populace which spoke many different languages by presenting ideas orally and visually using speeches, parades, plays, posters, agit–prop boats and trains. ('Agit–prop' comes from the words 'agitational' and 'propaganda'.) The modern use of these public forms was based on Russian folk traditions and an oral tradition; the content was new. When boats, train and streetcars were used, their flat sides became the support for painted images and slogans. All, and opposing, visual modes of expression were used, from the various avant–garde movements to the conservative and tradition.[4] Mayakovsky and others often gave public readings (or shoutings) of their poetry. In *For Reading Out Loud*, Lissitzky is linking the oral and visual, as they would be linked in a performance, by visually presenting what is

audible to the listener. The design works as 'report' or expression of this event as well as a 'script' for the event.

El Lissitzky has described his work on this book in 'Typographical Facts':

> "This book of poems by Mayakovsky is meant to be read aloud. To make it easier for the reader to find any particular poem, I use an alphabetical index. The book is created with the resources of the compositor's type–case alone. The possibilities of two–color printing (overlays, cross-hatching and so on) have been exploited to the full. My pages stand in much the same relationship to the poems as an accompanying piano to a violin. Just as the poet in his poem unites concept and sound, I have tried to create an equivalent unity using the poem and typography."[5]

The book format introduces each poem with a 2–page composition that consists of an 'illustration' on the left–hand page made of typecase elements: letters, rules, dingbats, standard decorative rules; and on the right–hand page, the title of the poem and the first words, phrases or stanza. The poems continue on the following spreads, treated, however, in a traditional typographic manner except for a pointing hand and a few words in red . Lissitzky drew the typographic arrangements for each opening composition; these were set by a German typesetter who knew no Russian, working at the Berlin branch of the Soviet state publishing house.

On the left–hand pages, Lissitzky created images that relate directly to the subject of the poem and often used a simplified representational mode: a recognizable stick figure and hat, or a boat. For other poems, the images are more symbolically related to the poem and treated more non–objectively. There are frequently letters and words along with the typecase elements that make the images.

On the right–hand pages, the title and some of the poem have been rendered 'expressively' in large letters, arranged loosely, vertically or at a diagonal. Often heavy bars will be placed with the lines of type or at angles to the type. Type 'furniture' has been used to construct some of the larger letter forms in solid shapes or in outline. Different typefaces are also used for contrast and a variety of form. Words and letters are presented singly, in phrases, boldly and colorfully: the book is printed in two colors, black and red. Though red was (and is still) the most frequently used second color in printing during this period, there is obviously a political/symbolic connection in its choice here. And there are also wordplays: sounds, and letters can be shared, the meanings expanded. Here Lissitzky integrates completely the verbal form and the visual form: the specific choices of letterforms as found in different typefaces, sizes and weights relate to meaning and to oral/aural perception.

This is the locus of the 'problem' for the translator and for the non–Russian reader of these poems, as designed in this book: how can both the literature and the art, which are so inextricably connected here, be translated and transposed into another language which is written with a different set of symbols.

Obviously, to read, understand, and appreciate fully the literature of another language and another culture, one must learn the language or have a superb translator. This gives the reader the *words* to ponder. But there are visual aspects of the written word, which, when consciously presented in order to expand the meanings and connotations of the words (as here in Lissitzky's work) need also to be translated and preserved in the new language. Consider the problems of translating the Italian Futurists' "Parole in Liberta" or Apollinaire's "Calligrammes" for the English reader. Individual words can be translated accurately and substituted in the visual arrangements

with some success. It is reasonably easy to understand the change of

VELOCITA to SPEED

or to have 'i become 'i

l t

s

p

l r

e a

u i

t' n

i

n

g'

because (1) we are dealing with the same visual form of alphabet and because (2) in most cases the visual message/content is in the form *given* to the words rather than in the form *inherent* to the letters or words. It is interesting to consider that in the above example 'it's raining' is the traditional translation, though 'it rains' would be a better formal match (that is, the same number of letters) in addition to being accurate linguistically. This is a good example of the balances and compromises encountered in attempting verbal/visual translations. There are, however, occasional cases in Apollinaire where the shape of the letter is quite important to the image; in the Futurists, the general shape/length of a word frequently makes some difference.

However, Lissitzky, working with the Cyrillic alphabet, was concerned with and fascinated by the arrangement of words to enable them to share sounds/letters in various positions: initial, medial and final, and by the

expressive qualities found in letterforms. Thus Lissitzky as visual designer *shows* the reader the puns that the writer has provided for his listeners by showing a single letter placed next to the other (unshared) letters arranged in a stack, or by differences in size or weight, or by printing in red, in contrast to the standard black. Each of these is a visual equivalent of the verbal pun; in the latter the listener hears two sounds/words, in the former the viewer perceives two forms/words.

The question remains: can the non–Russian reader see and understand this work to any extent comparable to the Russian reader's experience? By a careful process of investigation, deconstruction and reconstruction of the work as an integrated composition, the non–Russian reader can see and hear the poetry and can begin to appreciate the care with which Mayakovsky has chosen his words and the inventiveness with which Lissitzky has visually expressed them.

This is the problem that intrigued me as a graphic designer and as a teacher of graphic design history and typography: how to translate it all, the literature *and* the design for the English reader. I proposed this design problem to a graduate studio in graphic design at the School of Design, North Carolina State University.[6]

We enlisted the help of Professor Elisabeth Jezierski of the Department of Foreign Languages and Literatures at North Carolina State University. She provided background materials, translations (both published by other translators and her own), frequent consultations and enthusiasm throughout the project.

Information about the author, the designer, literature and design during this period of Soviet Russian history was gathered and brought to our discussions. We studied other examples of visual poetry and attempts to translate

it. The work closest to what we have attempted and which proved to be quite instructive is *Apollinaire, Calligrammes: Poems of Peace and War (1913–1916)* translated by Anne Hyde Greet (Berkeley: University of California Press, 1980) which presents the translations in the original configurations. We decided, however, that this presentation is flawed in that not enough attention was paid to matching typefaces, letter sizes and weights, and to the exact positioning of letters and elements. In this case, the language structure compromised the visual structure.

The students analyzed the parts of their selected spreads (they chose four out of the thirteen; we intend to proceed with the remaining ones). Available published translations were consulted and compared along with suggestions by Professor Jezierski, providing a range of verbal options (the two accepted versions of the book title indicate this possibility). The major work of translation (Marshall, Herbert, trans. and ed., *Mayakovsky*, New York: Hill and Wang, 1965) does not include translations of those typographic constructions which are not within the poetry texts; for these we depended on Professor Jezierski. In addition to finding the areas which required no changes (nonverbal), the student designers had to analyze what kinds of changes would have to be made in the verbal part: easy one–letter substitutions, more difficult word changes, most difficult letter/sound overlaps. Our goal, throughout this process, was to make as few compromises as possible; that is, to try to give the best verbal translation while at the same time maintaining all of the visual relationships: to be so comprehensive in the translation of all parts that the original Russian composition would not be required to understand the full meaning of the poem.

Our discussions included an issue which is raised frequently: to what degree is it appropriate for others

to visually interpret or express the verbal or literary work of an author? Is this not an imposition upon one creative person's ideas by another? In this particular case, however, the issue is moot: Mayakovsky asked Lissitzky to be both illustrator and book designer; the work is a collaboration.

The results of our work are presented here, with an explanation of the translation and design process for each. The poems are presented in their original alphabetical order which also happens to be in the order of increasing difficulty for the dual translations. I am indebted to the notes and comments of each student designer for this discussion.

Left March

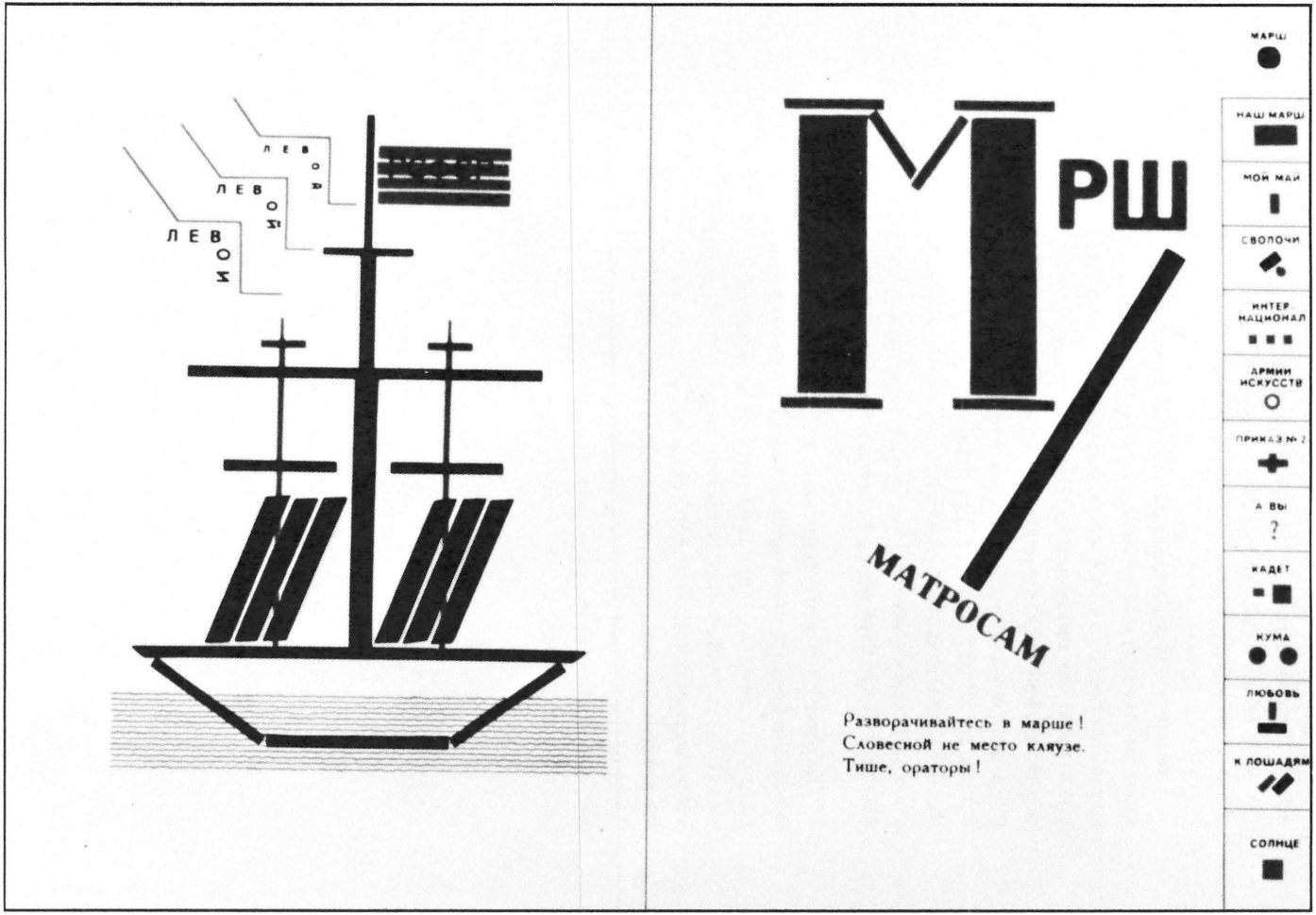
The left–hand page is primarily pictorial: a ship in the water with masts and flag. The characters on the flag translate literally into the abbreviation of the Russian Federal Socialist Republic (RSFSR). The word repeated three times and broken is the word 'left'. To compensate for one less letter in English, the letterspacing was increased as well as the point size of the letters. A formally matching typeface was selected. The right–hand page includes the title of the poem, 'Left March' plus its dedication 'For the Red Marines' or 'For/To the Sailors' and the first three lines of the poem. Again, 'left' has four letters to the Russian five and several which are narrower. The size and weight of the letterforms were matched and the letters spaced out.

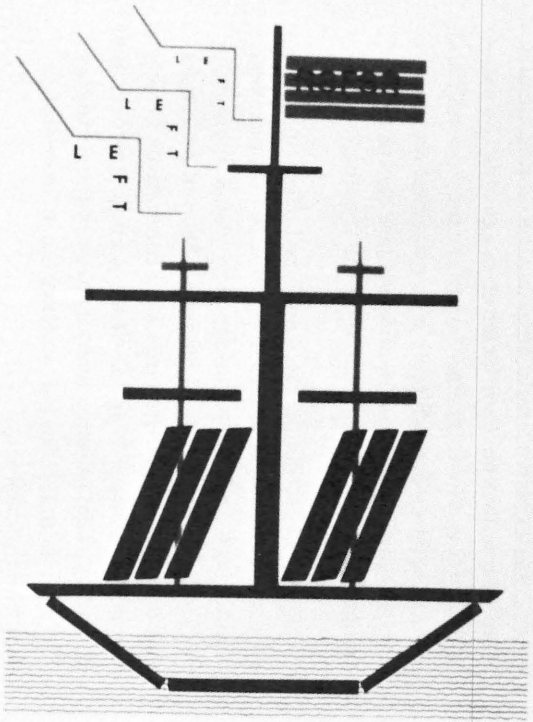
For 'March', the 'M' and the 'A' are the same; however the two Cyrillic letters Рш had to become three letters 'RCH'. A stroke had to be added to the original 'P' to make it a Roman 'R' and the remaining wide Cyrillic letterform was cut into two narrow letterforms with the intention that they would look strong and as if they were marching, to reflect some of the expressive flavor of Lis-

sitzky. The designer sees this as a weakness, in Russian the word is more clear and direct, in English, the narrow 'C' may be distracting.

The one–word dedication 'MATPOCAM' was translated into the literal three–word version 'For the Sailors' so that the first two words could be stacked next to the last to make one visual unit as the Russian does. The length and height of the original were matched, though the weight was not. Further search is required to find an equivalent Roman typeface. The designer has noted here that for a better visual translation, wherever possible she drew an alphabet based on the Cyrillic typefaces used by Lissitzky rather than search for an existing font.

The three lines of the poem were a simple translation into English, using some of Marshall's translation and maintaining the same line lengths. The typeface was chosen to match the Cyrillic, the larger initial capital letters were maintained and the choice of all caps for the English text was intended to imitate the Cyrillic flavor of the original. All three designers used the same typeface (Melior) as the basic text typeface for the English translations.





M[H

FOR THE SAILORS

RALLY THE RANKS INTO A MARCH!
NOWS NO TIME TO QUIBBLE.
QUIET, ORATORS!

MARCH

OUR MARCH

MY WAY

LOWLIFE

INTER-NATIONAL

ARMY OF THE ARTS

COMMAND NO

& YOU

CADET

GOD-MOTHER

LOVE

TO HORSES

SUN

Our March

On the left–hand page is a large red square for which no translation was necessary. Below this, floating on the diagonal, is a Russian wordplay which combines Бей and Бой and depends on the sharing of first and last letters in semantically related words. The word Бей means 'beat' and Бой means 'fight' or 'struggle'. The words are simple and direct; the reader easily distinguishes the two. The designer searched English synonyms and found two pairs of words which carried similar meanings, were as crisp in sound as the Russian, and contained letter duplications: 'beat' and 'bout' and 'strike' and 'strife'.

An analysis of the visual forms of each English pair was made. In the 'beat/bout' pair, an extra letter is added in the center, the focus of the wordplay. The designer sees this as unwanted 'visual noise' precisely in the place where the clarity of distinction is most desired. When the letterforms are considered, the initial Б in Cyrillic is close to the lowercase Roman 'b' but a 't' is far from the й in form. An alternative would be to use the more geometric 'T' to match the final Cyrillic letter, suggesting the use of 'B' in order not to draw attention to the mix of upper and lowercase letterforms. Finally it was decided that the English words presented in all lowercase except for the 'T' would be the best visual match for the Cyrillic.

The 'strike/strife' pair was analyzed. Here, in the focal area, there are single letters to provide the simple, clear distinction found in the Russian. Any visual distraction by 'STR' is kept outside of the focus. These three letters may keep the reader from making a comparison between the unlike forms of 'l' and Б which is good; however, they do add extra noise to the overall shape of the wordplay. The final 'E' in the English matches the й in overall shape and precision.

While the 'beat/bout' pair would seem to be the most obvious choice, due to more similar number of letters and the match of letter shapes, the designer decided to use the 'strike/strife' pair. In this solution, the uncluttered, punctuated wordplay of the original Russian is best reproduced in English. The designer matched the size and weight of the Cyrillic with Roman letterforms, some of which were distorted to increase their similarities with the Cyrillic (the 'K' for example).

The right–hand page begins with the poem title, which provides more of a visual challenge. The designer observed the directions of the letterforms, the repetition of letters and of formal elements within the letters, the interaction of adjacent letters, the effects of variations in the weight of letters and the effects of color change. The original words of three and five letters shared two letters; in English one is shared, but not in a visually useful place. Therefore, the problem here was to use the formal elements of the letterforms, and the visual nature of the strokes which make up the letterforms, to integrate dissimilar letters while at the same time creating two separate words. Admittedly, some of the rhythm of the strokes in the original is lost. In this case, in particular, the color distinction between the two words is critical for the English.

The stanza of poetry at the bottom was translated using a combination of several published versions and the help of Professor Jezierski. As before, the appearance of the Cyrillic was matched by the use of Melior with large initial capital letters and smaller capital letters for the rest of the text.

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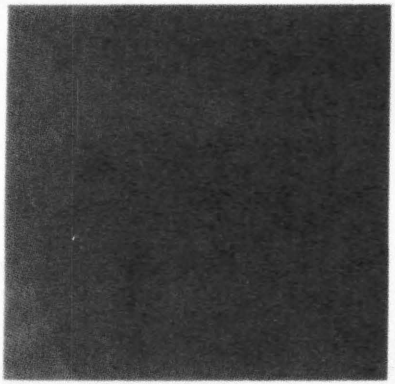

STRIKE

MARCH

BEAT INTO THE SQUARE THE THUD OF MUTINIES!
HOLD YOUR PROUD HEADS HIGH!
WE WITH THE FLOOD OF A SECOND DELUGE
WILL SCRUB THE CITIES OF THE WORLD CLEAN.

OUR MARCH
MY MAY
LOWLIFE
INTER-NATIONAL
ARMY OF THE ARTS
COMMAND No 2
& YOU
CADET
'GOD MOTHER
LOVE
TO HORSES
SUN

LOWLIFE!

The title of the poem can be translated literally as 'scum', 'riffraff', 'rabble', 'swine', or as Marshall has it, "On Trash". The opening spread is not really the beginning of the poem, but rather an introduction to it, and often not translated in publications.

The left–hand page has few changes in translation; the city names remain in the different connotative type faces chosen by Lissitzky. The other geographical name, САМАРА, becomes 'SAMARA' requiring only two letters to change; the designer chose the typeface Cheltenham Bold for the replacements. The meaning of this page is somewhat obscure and requires some knowledge of Soviet history. Samara (renamed Kuybyshev in 1935) was the scene of several tribal attacks in the 17th century; it was also the seat of the anti–Bolshevik provisional government and the constituent assembly of Russia in 1918. The illus–tration refers, possibly, to a scene of death and to the con–nections of the White Russians with western political capitals.

The right–hand page contains the poem title and four lines of poetry. The word 'lowlife' was chosen for the title because it has both the denotation and connotation of the Russian word and the same number of letters. The letter-forms were drawn by the designer, basing the shape and weight on the Cyrillic letters, as this afforded a much clo–ser match than could be found among existing typefaces. The seven letters were spaced optically to appear as evenly spaced as the Russian word.

The designer reports that the very literal translation of the four 'spiked verses' nailed to the corpus of 'Lowlife' was given by Professor Jezierski. Although not the ideal solution from the purely linguistic–poetic point of view, it has the visual advantage of having four lines with approx–

imately the same respective lengths in both languages. The letterspacing was adjusted as much as possible to emphasize the similarity. Overall the Cyrillic letters are more densely packed because there are more of them, which may heighten their effect, similar to lethal and bloody red nails. The letterforms used for the verses were created from Cyrillic letterforms using some direct substitution, some upside–down reversals, and some new construction.

The designer has commented: "I find this doubly–translated piece to be linguistically confusing and obscure; I doubt the verbal translation can transcend its time period and say much of anything intelligible to the average modern reader. The *visual* aspect of the translation, however, I find much more compelling. Here, the greater literalness employed, the more successful the translation of the original flavor and expression."

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LOWLIFE
INTER-NATIONAL
ARMY OF THE ARTS
COMMAND WORD
& YOU
CADET
GOD-MOTHER
LOVE
TO HORSES
SUN
LOWLIFE
SPIKED VERSES
STAND MUTE!
LISTEN TO THIS WOLF'S HOWL
BARELY FEIGNING TO BE A POEM!
LONDON
PARIS
Berlin

Friendly Regard for Horses

This poem is unusual in the collection in that the visual construction spreads across the top of both opening pages. The words are taken from the first stanza of the poem (repeated at lower right). The poem both verbally and vis ually reflects the rhythm of horses' hooves; the Russian words sound like 'grib, grab, grob, groob'; and the large letterforms echo the shape of the horse's head, legs and hooves.

The designer reports: "This was the most difficult part of the poem to duplicate since the word chosen had to meet the following requirements: (1) it had to have four characters; (2) it had to have three characters that remained constant while one changed; (3) it had to retain meaning as each character changed; (4) it had to contain letterforms that looked horse–like; and (5) verbally the words had to make sense in the poem while retaining the rhythm".

It should be pointed out that one part of the richness of the Russian language could not be retained in this form of translation. The Russian words/sounds also carry some other associations and suggestions: 'grib', mushrooms, fungus; 'grab', stolen, robbed; 'grob', coffin, grave'; and 'groob', rude, coarse.

By choosing the word 'slip', two of the original Cyrillic letterforms could be retained, though one had to be flipped. Only the 'S' had to be created from the available, rather crude, letterforms, which explains its squared–off form, and which the designer found horse–like. In the poem the horse slips on some ice, an additional semantic and aural connection for the words 'slap, slop, slup'. The added 'p' in 'slap' even serves to emphasize the terminal consonant sound and provides an accent note in the rhythm. In the Russian, this extra letter in the second word

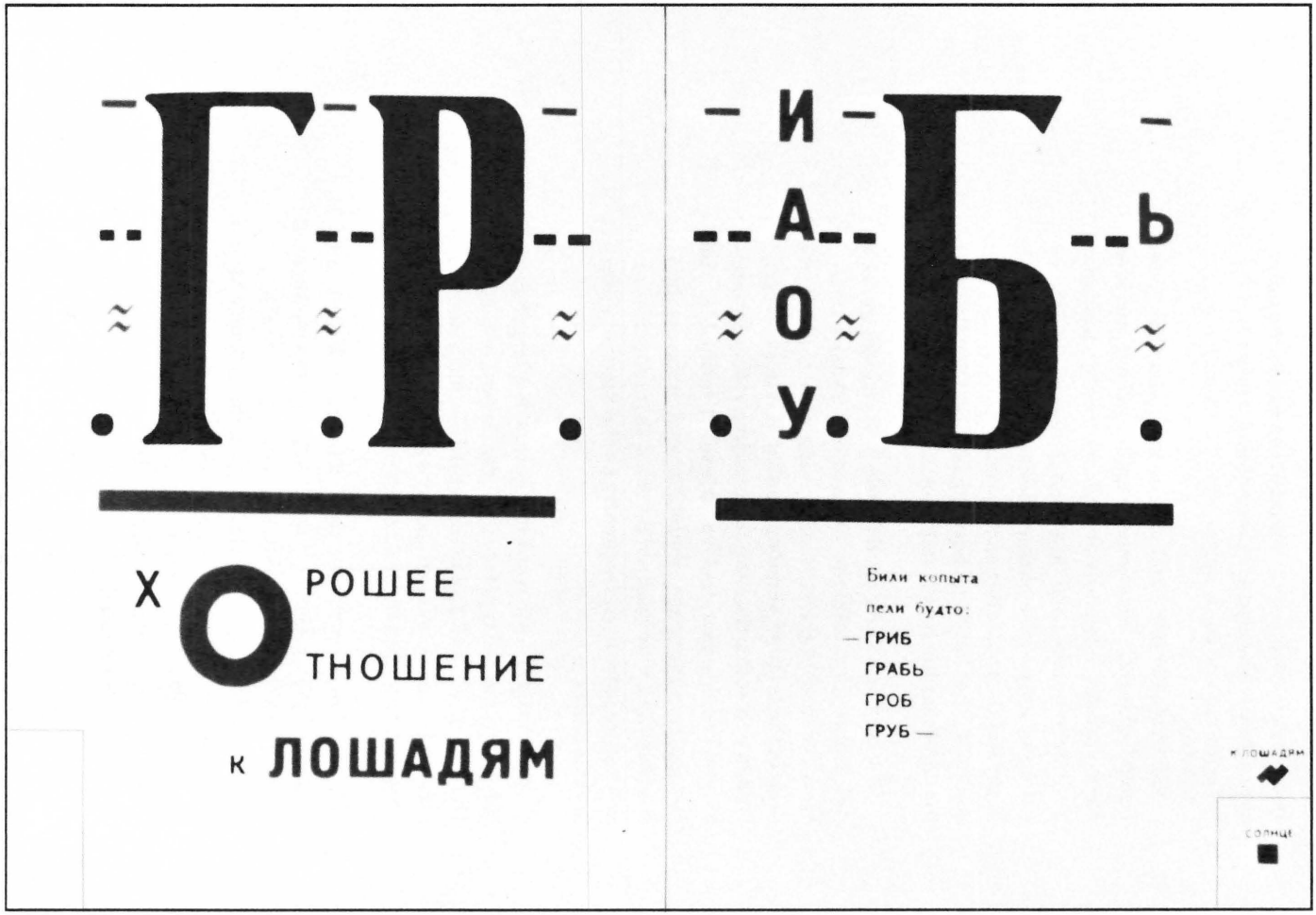
becomes an unvoiced 'p' sound at the end of the other three words. The elements resembling dashes and the sign for approximate equality are retained from the original.

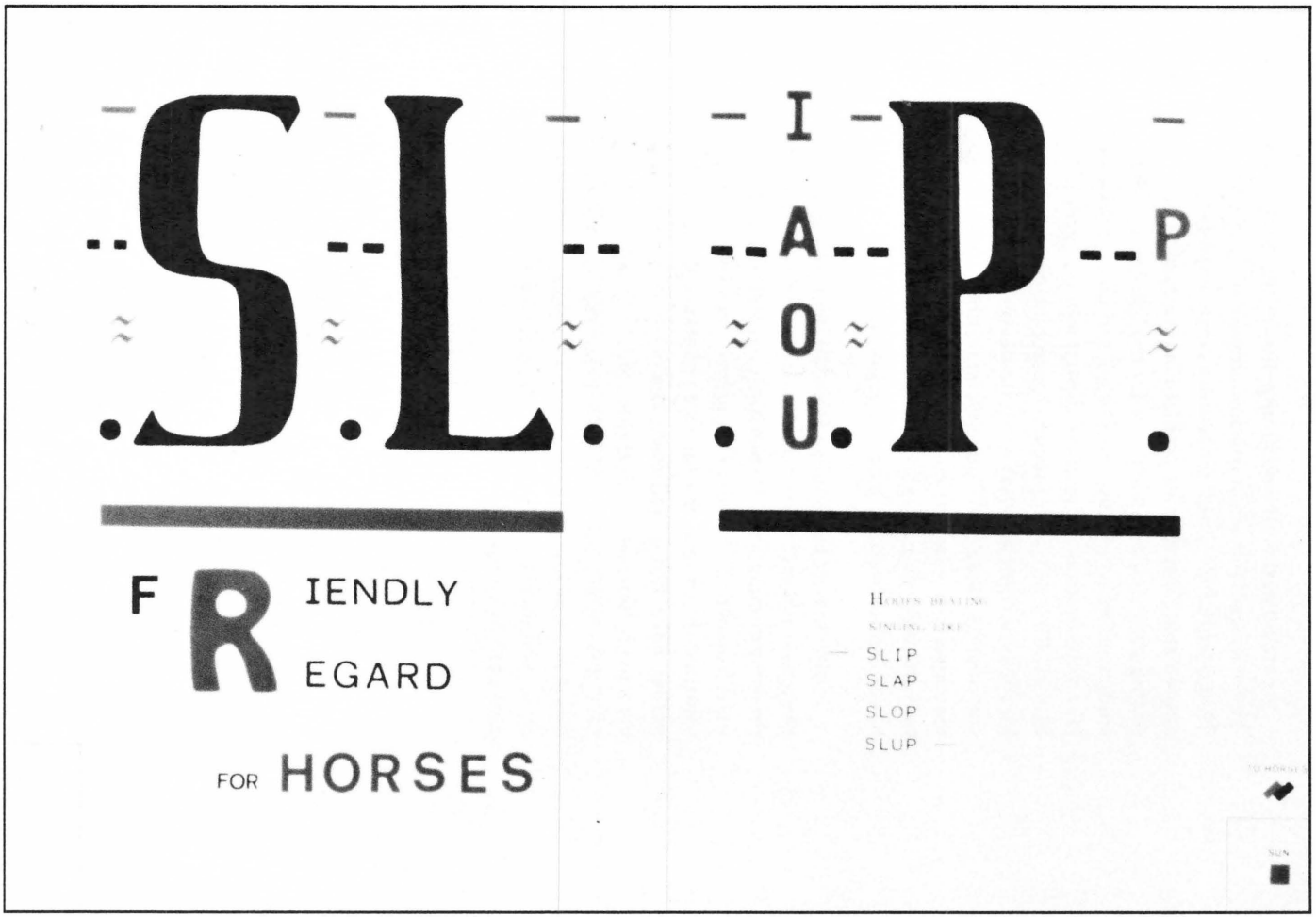
On the lower left–hand page is the poem title. Several published translations were consulted which provided some variety: 'a friendly attitude to horses', 'human attitude to horses', and 'kindness to horses'. For the visual translation of the phrase, the second letter of the first word and the first letter of the second word must be common. The designer chose the phrase 'friendly regard for horses' as the best match semantically and visually.

The common letter for this title is 'R' which, though different in form from the 'O' used by Lissitsky, does carry the form of the horse into this area of the composition. In the original version, the shared letter is larger, bolder, and softer than the surrounding rather square letters. The designer discovered a softly formed 'R' and manipulated the space around it to match the original relationships. Our research revealed that typefaces of this nature were used frequently by the Russian Futurists in their books.

In the original, the word for 'horses' is a larger and bolder form of the typeface used for the rest of the title. The designer found and used Record Gothic Extended as a match for the geometric quality and stroke width of the smaller words, and the Bold version for 'horses'.

On the lower part of the right–hand page is the beginning of the poem. For the English version, the words used were chosen from several translations to match the number of Russian words. Here again the typeface Melior is used in two sizes of capitals to resemble the Cyrillic. The four words which repeat the featured section above are set in a sans serif typeface similar to the original, and the dashes are retained.




S.L.
I
A
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F R IENDLY
EGARD
FOR HORSES
SLIP
SLAP
SLOP
SLUP

As stated earlier, the main impetus for this project was the frustration felt when confronted with literary and design work that could not be fully comprehended and appreciated. Solving this problem in an educational setting provided many benefits for the teacher and the students. Pedagogically, this project served several goals: (1) a vehicle for learning more design and typographic history; (2) a way to appreciate the inventiveness of Lissitzky; a contemporary twist on the methodology of copying the Masters; (3) an exercise in form analysis, matching and creation; (4) an opportunity for collaboration among designers, and with others outside of design toward the solution of a common problem.

In conclusion, the English translations of these four poems should and will undergo further refinements as the project proceeds with the rest of the collection. At this time, however, the student designers feel that they have captured the drama, rhythm and content of the originals, as they have interpreted them. If any compromises have been made here, as one designer said, "Perhaps we did El Lissitzky proud, but slighted Mayakovsky". Having made this start, now knowing the possible pitfalls, further and closer collaboration with linguists should allow the project to be completed.

Footnotes

1 The historical context of the poster has been changed from the Civil War, as previously believed, to the Russo–Polish war. The 'whites' in this case may be general reactionary forces or the Poles associated with the White Russian General Wrangel. The context change was suggested by Peter Nisbet and commented upon by Yve–Alain Bois.

2 'Topography of Typography', *Merz*, #4, Hanover, July 1923, Kuppers–Lissitzky, (Trans. 1968, p. 359.)

3 Alan C. Birnholz, 'El Lissitzky and the Spectator: From Passivity to Participation', in Barron and Tuchman, p. 99.

4 Background from Szymon Bojko, 'Agit–Prop Art: The Streets Were Their Theater', in Barron and Tuchman, p. 72–77.

5 *Gutenberg Festschrift*, 1925, Lissitzky–Kuppers, 1968, p. 95.

6 The students and their work: Michelle Stone, 'Left March' and 'Lowlife'; David Urena, 'Our March'; Sherry Blankenship, 'Friendly Regard for Horses'.

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For *Reading Out Loud* in Context

A template assists desktop publishers to make typographic decisions on the desktop, but does not necessarily provide sound design. Even simple modifications can render a template ineffectual.

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For Reading Out Loud in Context

Abstract **Visible Language** asked Szymon Bojko and Krzysztof Lenk to respond to Martha Lange's typographic translation of **For Reading Out Loud**. Lange and her students concentrated on the formal characteristics of the poems with regard to verbal and visual translation. While the mythic dimensions of Mayakovsky and Lissitzky do not encourage a critical look at their work, Bojko and Lenk share two requisite characteristics that make them credible respondents: they are design educators and Eastern Europeans with more immediate knowledge of the history and character of events to which **For Reading Out Loud** refers. Bojko and Lenk put the poems into a needed social and historical context by performing a content analysis and discussing the revolutionary nature of the poetic and typographic communication and the circumstances surrounding publication.

Visible Language, Volume XXII,
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Spring 1988. Szymon Bojko &
Krzysztof Lenk
pages 223-231
Rhode Island School of Design
Providence, RI 02906

Visible Language: Why do we need to know the social and political context of these poems?

Information about the historical background of a piece of work, the situation and circumstances under which a given piece emerges is indispensable for the understanding of its premise. Further, it is useful for objectifying the work's evaluation.

For Reading Out Loud is a verbal-visual product belonging to the category of so called agit-prop art whose messages addressed the reader's emotions and stimulated action. The poet and the graphic artist intended to raise an emotional response and create desired behavior. Did readers react? Was the goal reached? First, let us examine the content of a few poems.

"Left March" The poem contains a precise description of a detachment of mariners marching in close formation. Regulations of the Russian Navy demanded that files be so close that each man would almost touch the back of the man ahead of him. Another characteristic feature of the mariner's marching was the vigorous throwing up of the left leg. The commander stepping alongside shouts the command "left". Emphasizing the "left" strengthens the rhythm of the march and helps to stress the feelings of strength and dread which marching sailors stimulate. It is a detachment of living people personifying a war machine running non–stop (a tank), inevitably destroying opponents in its path.

In the poem "Left March" the poet uses phrases characteristic of the Bolsheviks' political language of those years. There is a simplified distinction between the right and the left wings. The left one denotes the IIIrd International and, in Russia, only the followers of Communism. From the idea of "the left" the Bolsheviks exclude other socialist factions such as Mensheviks, Socialist Revolutionaries, and Anarchists.

The "Left March" raises the use of violence to the level of a moral category (virtue): "Silence, you orators! You have the floor Comrade Mauser". In the

eyes of the poet, the brutal strength typified by a gun dominates all other arguments, i.e., rational, moral, or theological.The poet glorifies the military expansion of the revolution all over the world. The poem "Left March" belongs to the wider group of tenets propagating political intolerance, the tenets which motivated the red terror: who is not with us and does not march left, is against us and must be physically destroyed. In that way the idea that the ends (goal) justified the means (put into practice by Lenin) became a "superior" practice of the Russian revolution and soon after of the Soviet state. As a consequence, those who organize terror are a priori absolved from the sin, since they sin in the name of a good cause.

"Friendly Regards for Horses" On the literal level the poem appeals to human conscience for a humane relation towards horses.[1] Why is the poet concerned with the fate of a horse?

During the civil war, horses were the primary means of transportation for the army as well as work animals in the hinterland.

They were exploited fully in life, then were eaten when dead. In the years 1918–1922 horse meat was rationed and was not available on the market. There is an interesting witness to these times. In the documentary film **Art for the Millions** (directed by T. Pobog–Malinowski), the painter Vladimir Roskin, an author of the agitational posters for Rosta Windows (for whom Vladimir Mayakowsky was a creative director), appeared. The following is Roskin's reminiscence:

> "One day I got the news that food rations were being distributed. I rushed out; food was very scarce at that time. It was a dead horse that was being cut to pieces. But by the time I arrived all there was left was the horse's head. I accepted it gratefully—it kept me alive for six long weeks." Continuing his report, Roskin described the picture–painted later–which showed him carrying the horse's head in a Moscow street in 1918. In the empty store win-

dows, instead of merchandise, large posters by Mayakowsky hung. Ideas substituted for material goods. Incidentally, Roskin was the author of cartoon–like propaganda posters. One of those cartoons reveals a full, gorging American. . .[2]

"Lowlife"

This is a poem about hunger in the region of the Samara river, the fertile land of the Povolzhye region. The poet appears here as a canvasser. Using revolutionary phraseology he accuses England, France, Germany, and the United States of causing the plague of hunger, though the historical facts contradict the interpretation.

"Command No 2 to the Army of the Arts"
The poet speaks:
Give us oil from Baku!
Give us new forms, we're waiting!

The first appeal is directed at the Red Army, the second at the artists. For the latter, experiments with artistic form were acceptible—even expected—they were not a cause for personal risk until a few years later. The call for access to oil sources in Baku is more ambiguous. In that time Baku—located in Azerbeidzhan—was divided from Soviet Russia by Georgia, an independent, democratic state with a multi–party system. The Mensheviks were in the majority and ran the government. An envoy from Soviet Russia was accredited in Tbilisi. After the propaganda campaign (part of which is the poem by Mayakovsky) and numerous provocations by the Bolsheviks, the Red Army invaded Georgia and annexed it to the Soviet Union, thereby opening the way to oil from Baku. Twenty years later the same pattern of behavior was repeated in Estonia, Lithuania and Latvia. Only mutilated Finland managed to survive by paying a cruel tribute of blood.

III International

The poem praises the world revolution which, beginning in Russian, will soon spread all over the world and will not stop until it sets up red banners on New York skyscrapers. The hammer and sickle will become a common symbol of the new. It is a mad vision, which even in those days caused arguments among Bolsheviks and the Left wing in the Western world.

In summary, we see in the analysis of the context of these poems how deeply they were set in the reality of that time. Mayakovsky put into the poetic stanzas the hopes, illusions, myths and also the diffused phraseologies, half–truths, and lies of Bolshevik propaganda.[3]. El Lissitzky gave compelling graphic form to the poems by Mayakovsky.

Visible Language: were these poems revolutionary? In terms of their communication or in terms of their aesthetic form?

Mayakowsky's poetry used new means of expression. The poet introduced a street vocabulary, colloquial speech, military terms, as well as the abbreviations used by Bolshevik agitators. Mayakovsky beats a rhythm, applies repetitions and assimilates a poem to a poster stripped of ornaments and equivocalness. A poem frequently takes the form of an agitator's monologue performed in front of a crowd.

The artistic and aesthetic values of Mayakovsky's poems are indisputable and have been precisely described by many international scholars. Mayakovsky's poetry destroyed canons of classical order and evoked both objections and enthusiasm from numerous imitators. The myth of Mayakovsky, his creativity and tragically– ended life, continue to inspire new generations of poetic search.

Visible Language: visually, the poems appear strong and energetic but also quite dispassionate and objective—did they inspire strong emotion and action?

For readers of Mayakovsky's poems, especially for those who know the historical and social context and remember their experience of these times in youth, Lissitzky's graphic solution appears to be cool–minded, aesthetic and too speculative [4]. The famous thumb–index, borrowed from dictionaries and encyclopedias has, in the case of a small book containing thirteen poems, only a decorative value.

The usefulness of the typograhic composition in facilitating the reading aloud is a separate question. With a little imagination and common sense, one notices immediately that Lissitzky's typography does not lend itself to be read aloud but demands to the looked at. This was the original intention. A literal interpretation of the title of the book causes a misunderstanding.

Immediate emotional influence upon a reader (agit–prop) was Mayakovsky's presupposition; this is visible in the majority of his poems created during the most difficult period of the revolution of 1917 and the civil war of 1918-1921. Lissitzky's book, created several years later under different circumstances does not show the drama of Mayakovsky's poems.

For those who are familiar with the time, place and circumstances of this book's genesis it is clear that Lissitzky's experiment was not intended to be used in Russia and was not known there. The first Russian review of *For Reading Out Loud"* was given in the 1960s by Khardshyev. Until that date there was silence on the topic.

In the case of Lissitzky's work on this project, we deal with a type of graphic mystification that begins with the reason for its publication. *For Reading Out Loud* was

printed in 1923, in Berlin, in the Lutze & Vogt Press as an order of the State Publishers RSFR Staatsverlag (an organ of the Soviet government), which had its office in Berlin. Judging from its world market price, this publication appeared in a small edition. The book was intended to be experimental; it was not planned for mass readership.

In the 1920s many publications of different kinds were published in Germany by the commission of the official Soviet authorities. Berlin was the first place of contact between revolutionary Russia and the West. It was a city where two waves of Russian immigrants met with equal possibilities: the whites (connected with the czar's Russia and the liberals), and the reds (Soviet Russian emissaries such as Ehrenburg or Lissitzky) whose task was to throw bridges across to the leftist intellectual and artistic circles in the West.

The Weimar Republic was the first Western state which recognized post–revolutionary Russia. Germany was first to begin trade, technological, and military exchange with the Soviet Union. A quick second was the United States, which made huge investments in automobile and chemical industries. Helped by the spirit of American–Russian cooperation, Mayakovsky and other writers visited the United States in the mid-20s.

Lissitzky, who was educated and well connected in Germany (not to mention his personal intentions and reasons), played the role of emissary; he carried out governmental commissions. Thus the publication of *For Reading Out Loud* was a part of the propaganda program. It presented Russia as a center of European avant–garde and played a role in creating a positive "image" of post–revolutionary Russia.[5]

Lissitzky's world position as an innovator and experimentor in various fields of art and design is unquestionable. Nevertheless, *For Reading Out Loud* evokes controversy and, perhaps, needs a new, critical, analysis. From our point of view, Lissitzky's experiment takes on a formalistic and decorative character. The book is detached from its time and space, suspended between functionalism and aesthetic constructivism. Although it has a certain position in the history of typographical experiments, it is not as completely successful a work as *The Story of Two Squares* by the same author.

Notes

1 Perhaps the poet is using a metaphor to appeal for an attenuation of the cruel customs of that time. Another outstanding Russian poet Maximilian Voloshin describes fussilades in the volume *Terror* (this was never published in the USSR).

2 See Szymon Bojko. *New Graphic Design in Revolutionary Russia* New York: 1972.

3 See Szymon Bojko. Three waves of Emigration, in *Samizdat Russian Art.* New York: 1986.

4 It is worth remembering the beautiful, poetic books in the style of Chagall, in Yiddish, which created the second, parallel movement in Lissitzky's production.

5 Projects from the 1930s presented in a recent exhibition of Lissitzky's works at Harvard University raise a number of questions concerning evaluation of the designer's creativity in terms of both his accomplishments and his failures.

While both Szymon and Krzysztof speak English, it was easier to discuss these ideas in Polish. Bozena Shallcross translated their discussion into English.

Metadiscourse and the Recall of Modality Markers

Magazines and books offer desktop publishers a variety of design assistance. Even the best advice, taken out of context, can form the basis for poor design. The elements in this article can be effective if used well.

Metadiscourse and the Recall of Modality Markers

Abstract

Many studies of discourse and discourse processes assume that informative texts convey only propositional or referential meanings. This paper identifies and classifies several kinds of metadiscourse, which convey not propositional but textual or interpersonal meanings. In beginning to explore how the kinds of metadiscourse that convey interpersonal meanings affect readers, an immediate recall test on two informative paragraphs with some modality markers added to them was run. In the light of these results, some possible roles of modality markers in discourse processes are discussed.

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Much of the recent work on the nature of informative texts and on the processes that readers apply to them proceeds as if there is only one kind of meaning in such texts, the referential, ideational, or propositional. And to represent this meaning researchers have devised various kinds of propositional analysis. As Spiro notes, "Almost all recent Anglo–American research [in cognitive science] has focused on aspects of mental activity that can be put into words or at least represented in some discrete propositional form" (1982b, p. 29). This work assumes that the meaning of informative texts is in some way reducible to or expressible as an ordered list, network, or hierarchy of propositions. And these propositions convey a message "which has specific reference to the processes, persons, objects, abstractions, qualities, states and relations of the real world. . ." (Halliday, 1973, p. 8).

It is easy to find influential studies relying on some form of propositional analysis in investigations of the structures of texts or of the various mental processes that readers apply to them. For example, Kintsch (1974) and Kintsch and Keenan (1973) provide evidence that readers process and store texts in terms of their underlying propositional structures. Meyer (1982) has shown that these propositional structures are hierarchical, with some propositions superordinate to and better recalled than others. Marshall and Glock (1978–1979) have tested the effects on comprehension and recall of variations in the logical network of propositions and in the staging of propositions. And Clark and Clark (1977), Frederiksen (1977, 1986), Kintsch and van Dijk (1978), Kintsch and Vipond (1979), Vipond (1980), and van Dijk and Kintsch (1983) have all discussed and experimented with various other aspects of the propositional structure of texts and of readers' memory structures as they have worked on models of text production, processing, comprehension, storage, and recall.

But there are some linguistic elements in many informative texts that convey meanings that resist classification as referential, ideational, or propositional. For example, consider the following short excerpts from texts:

> The organization of this article is as follows: First, the semantic structure of texts, including their macrostructure, is discussed briefly, mainly with reference to our previous work. Then, a psychological processing model is described

> that is based on these ideas about text structure. (Kintsch and van Dijk, 1978, p. 364)
>
> The above digression had no other purpose than to call the reader's attention to the important line of demarcation between the Prague and Copenhagen conceptions; it was not intended to solve the very difficult problem of the interrelation of internal and external factors of language development. This problem will have our closer attention later on in the present chapter. Here, we go back to the main line of our discussion—comment on the therapeutic changes in the development of language, as conceived by Jakobson in the late twenties. (Vachek, 1966, p. 23)
>
> But there is no doubt in my mind that animals can do very many complex things of which we have not the faintest inkling, and I think even the study of vocalization is still promising for the linguist. (Kalmus, 1966, pp. 276–277)
>
> Yes, my countrymen, I own to you that, after having given it an attentive consideration, I am clearly of opinion it is your interest to adopt it [the Constitution]. (Hamilton, Madison, and Jay, 1942, p. 12)

Clearly, to consider the elements of these excerpts that comment on text structures, on the actual or alleged validity of information, and on authorial attitudes as propositional discourse would entail a severe wrenching of the meaning of propositional discourse. Such elements are better considered examples of what Williams (1981a, 1981b) calls metadiscourse. Metadiscourse is "discourse about discourse, words and phrases and clauses—even sentences—that refer not to the subject matter 'out there' but to the act of discoursing, to the speech event that discourse and its readers create" (Williams, 1981b, p. 195). Or, in Dillon's words, it is writing that "calls attention to the act of discoursing itself. . ." (1981, p. 114).

These statements imply that as writers proceed, they "usually have to write on two levels" (Williams, 1981a, p. 47). On one they supply information about the subject of their text; they expand propositional information. But ". . .whenever *I* or *we* appear, or the reader is addressed (with or without *you*), there is a second plane, one that represents a writer writing and a reader reading the presen-

tation. . ." (Dillon, 1981, p. 114). On this plane the writer helps the reader organize, classify, interpret, evaluate, and react to the propositional material.

Not much work in classifying kinds of metadiscourse has been done. However, if one follows the suggestions of Williams (1981a, 1981b), Lautamatti (1978), and Crismore (1983, 1984), he or she can see that there are at least seven kinds of metadiscourse, the exact boundaries of which will probably have to be more accurately mapped as research continues. Since the details about and examples of these kinds of metadiscourse are presented in Vande Kopple (1985), only a brief summary of their functions will be given here.

In the first place, there is a kind of metadiscourse that writers use to show how their texts are organized and how different parts of them are related to one another. Some of these connectives indicate sequences of material, and some indicate a logical or temporal relationship. Also belonging in this category are reminders about material presented earlier in texts, statements announcing material that one is on the verge of presenting, and announcements of material to appear later in texts. Finally, when writers reintroduce information that has already been included in texts or explicitly connect new information to information already presented, they often depend upon what Williams calls topicalizers. These are elements that "focus attention on a particular phrase as the main topic of a sentence, paragraph, or whole section. . ." (Williams, 1981a, p. 50). Since these too connect blocks of propositional information to each other, they probably also belong with the text connectives.

The basic function of a second kind of metadiscourse, the code glosses, is to help readers grasp the appropriate meanings of elements in texts. Sometimes writers use words that define or explain a word or idiom, that signal

rephrasings of portions of texts, that give cues to proper interpretations of elements, that comment on ways of responding to elements in texts, and that call attention to or identify the language or style that they are using.

With a third kind of metadiscourse writers can make explicit what specific discourse act they are performing at certain points in their texts. For example, they can introduce something, hypothesize, claim, promise, give examples, and conclude, among other possibilities. To make explicit for readers what action they are performing at a certain point, an action that in itself can be significant when writers move from one action to another or when their actions might have important or unexpected implications for readers, they can use such phrases and clauses as *to introduce this section*. These elements of language can be called illocution markers.

A fourth kind of metadiscourse is used to show what assessment of the probability or truth of propositional content writers wish to express and to indicate how committed they are to that assessment. A good name for examples of this kind of metadiscourse is modality markers. Some of these hedge material. Some emphasize that the writer regards the material as true. Some establish a basis for readers' taking information as writers wish them to. And some are appeals for the suspension of judgment about the validity of information.

Functioning in a slightly different way are elements that constitute a fifth category of metadiscourse, the narrators. These exist in texts primarily to let readers know who said or wrote something; for these to be narrators and not modality markers, the truth value of the message must not be an issue.

Often, the source of information does not affect our judgment of its truth value. We simply accept it as true. After hearing "Tom just got back from lunch. He says

it's starting to rain, " for example, unless Tom has given us reason to distrust him, we would not challenge the "it's starting to rain" and would regard the "He says" simply as an indication of the source of the message.

However, sometimes the source affects our judgments about the truth of messages. Prefacing the message "Time is a relative construct" with "According to Einstein" would make us regard its truth value differently from the way that prefacing it with "According to some randomly selected kindergarteners" would. And sometimes statements attributing or not attributing messages to people are precisely what we argue about ("Chomsky never said that the grammar would have psycholinguistic validity"). In such a case, the "Chomsky never said" leaves the realm of metadiscourse and becomes the proposition we debate. All these distinctions depend on specific contexts and on histories of discourse participants.

The sixth kind of metadiscourse allows writers to reveal their actual or feigned attitudes toward propositional content. They can indicate their attitudes about the importance of material, about the interest of material, about the appropriateness of material, and about personal emotional concomitants of material.

Finally, there is a kind of metadiscourse best labelled commentary. The key to identifying commentary is that when writers use it, they address readers directly, usually appearing to draw them into an implicit dialogue. In sum, the specific kinds of metadiscourse include at least text connectives, code glosses, illocution markers, modality markers, narrators, attitude markers, and commentary. And it seems that some linguistic elements can fulfill the functions of more than one of these kinds. For example, phrases such as *in conclusion* probably function in most texts as both text connectives and illocution markers. Whether one function is more prominent than another

cannot be determined outside the context of a particular text. It also seems that some linguistic elements (for example, bits of commentary) might function as metadiscourse in some texts and as primary discourse in others, depending on the focus, force, and genre of particular texts.

What justifies considering these seven kinds of elements as functioning differently from primary discourse is that they do not add to the propositional information of texts. They do not refer to objects, actions, events, or states of affairs in the world outside the text and the interactions associated with the text.

As Halliday points out, "When language is used to exchange information, the clause takes on the form of a PROPOSITION. It becomes something that can be argued about—something that can be affirmed or denied, and also doubted, contradicted, insisted on, accepted with reservation, qualified, tempered, regretted and so on" (1985, p. 70). However, when language is used to perform a metadiscourse function, it is not subject to the activities and processes that Halliday delineates. That is, it is not language to be argued about, affirmed or denied.

Since this last statement in itself is probably debatable, we should consider some examples. I will draw examples from the modality markers, since in their function of signaling assessments of the truth and probability of propositions, they probably strike many people as being subject to the same kinds of evaluation that propositions are.

In Halliday's grammatical system, modality can be realized in the clause in two congruent ways. The word *congruent* here refers to the fact that some linguistic forms are more literal or are more directly connected to what they represent than are others. For modality, one of the two congruent forms is the finite modal operator ("It *must* have snowed."). The other is a modal adjunct ("It *certainly*

snowed."). The clause, then, is really a proposition (*It snowed*) with a tag or adjunct indicating a speaker's personal assessment of its truth attached to it. The clause expresses a proposition as well as shows a speaker intruding to offer a position on the truth value of the proposition.

But as Halliday also points out, speakers and writers often choose to express modality judgments in forms other than the congruent ones. They like to take the congruent forms and "dress them up," express them as clauses in their own right. Thus many speakers and writers choose to dress up *It certainly snowed* as *I am certain that it snowed* or *It is certain that it snowed.* Thereby they give prominence to their own point of view, especially in the form with the personal pronoun I. But in so doing, they take what is a modal adjunct to a proposition (*certainly*) and make it look like a proposition by itself. They make it look like the main assertion in a sentence.

Thus hearers and readers are often tempted to think *I am certain that* and *It is certain that* are subject to the same processes of debate as true propositions are. But *I am certain that* and *It is certain that* are really not subject to these processes. We can see this most clearly if we turn the sentences of interest to us into tag questions. In such constructions, the tag will attach itself or refer to the proposition, not to a modality judgment. For example, in *It snowed, didn't it?*, the tag applies to the proposition *It snowed.* When we add a modal adjunct to the sentence (*It certainly snowed, didn't it?*), the situation remains the same. The tag applies to the proposition itself.

But when we consider a dressed–up form such as *I am certain that it snowed*, at first we might be tempted to think that *I am certain* is the proposition and therefore should be tagged. But we would not say *I am certain that it snowed, am I not?* Rather, we would say *I am certain that it snowed,*

didn't it? That the tag is properly *didn't it* and not *am I not* shows that even in a sentence like *I am certain that it snowed,* the proposition is still *it snowed,* and *I am certain that* is an expression of modality, not subject to the evaluative processes applied to propositions. In both *It certainly snowed* and *I am certain that it snowed,* then, we find a common proposition and two different ways in which speakers intrude into the speech act to assess it.

This same kind of analysis applies to other kinds of metadiscourse. For example, consider a sentence with an illocution marker introducing a proposition: *I conclude by noting that it snowed.* Is the illocution marker subject to the evaluative processes that we apply to propositions? If so, it should be what the tag in a tag question applies to. But we would not tag this sentence as *I conclude by noting that is snowed, don't I?* Rather, we would say *I conclude by noting that it snowed, didn't it?* This shows that here, too, the proposition is *it snowed* and the main clause is a dressed–up form of an illocutionary adjunct *(In conclusion* or *To conclude).*

None of these comments is meant to suggest that hearers and reader cannot or do not react to or judge elements of metadiscourse. Indeed, if a person were to say or write sincerely that *I am certain that the world is flat* or *I find it wonderful that the little boy slashed his hand,* we would probably react quite intensely. In addition, if a person were to say or write *He fell to the ground, clutching his chest; however, he died,* we would immediately react.

But how, to what, and on what basis would we react? In the case of the first of these three examples, we would react to the expression of modality. We would say that it is misguided, silly, or stupid, and we would do so on the basis of our knowledge of the world. We would not say that *I am certain* itself is false, since this person is sincerely certain. In essence, we would be reacting to the

speaker's or writer's personal judgment, calling it misguided, silly, or stupid.

Similar comments apply to the second sample sentence. In this case, we would react to the expression of attitude. We would say that it is inappropriate or cruel, and we would do so on the basis of acquired attitudes toward serious bodily injury. We would not call the expression of attitude false, since the person apparently has that attitude. Again, in essence we would be reacting to a speaker's or writer's personal attitude, calling it inappropriate or cruel. In the case of the third sentence, we would react to the *However*, calling it inappropriate or illogical on the basis of semantic relationships expressed in the text and derivable from experience in the world (dying is often subsequent to falling on the ground while clutching the chest, not contradictory to such falling). Again, we would not call the *However* false, just illogical. In essence, we would be reacting to a perceived flaw in the structure of a text, in the logical relationships within a text.

In sum, we use propositional material to convey information about objects, states, events, and actions in the world outside the text and the interactions associated with it. Our concern is whether the information is true or false of that world. On the other hand, some kinds of metadiscourse convey information about speakers' and writers' personal responses to (judgments about, beliefs about, attitudes toward) and uses of propositional information. Our concern is whether such responses are appropriate and wise. Other kinds of metadiscourse convey information about how parts of texts should be linked together to form a coherent whole. Our concern is whether the linkages are fitting and logical.

Thus as Halliday has shown throughout his recent work, when people use language, they nearly always

work toward fulfilling three macrofunctions. They do this by selecting options in three basic semantic systems, the ideational, the interpersonal, and the textual. Thus they convey at least three different kinds of meaning.

Options within the ideational system "are concerned with the content of language, its function as a means of the expression of our experience, both of the external world and of the inner world of our own consciousness. . . (Halliday, 1973, p. 58).

Options within the interpersonal system are concerned with "language as the mediator of role, including all that may be understood by the expression of our own personalities and personal feelings on the one hand, and forms of interaction and social interplay with other participants in the communication situation on the other hand" (Halliday, 1973, p. 58). These options allow writers to reveal their personalities, to evaluate and react to the propositional material, to show what role in the communicative situation they are choosing, and to indicate how they hope readers will respond to their propositional messages.

And options within the textual system have "an enabling function, that of creating text, which is language in operation as distinct from strings of words or isolated sentences and clauses. It is this component that enables the speaker to organize what he is saying in such a way that it makes sense in context and fulfills its function as a message" (Halliday, 1973, p. 58). Without these options, writers would be able to form only lists of sentences, not cohesive texts, and they would not be able to express ideational and interpersonal meanings well.

Obviously, propositional meaning or primary discourse fulfills the ideational function of language. And it seems that the kinds of metadiscourse—along with other linguistic elements—can fulfill either interpersonal

or textual functions of language. That is, the illocution markers, modality markers, narrators, attitude markers, and bits of commentary probably work to fulfill the interpersonal function of language. And text connectives and code glosses probably work to fulfill the textual function of language.

Certainly the interpersonal and textual functions are important in linguistic actions. But there is very little agreement about how much of any particular kind of metadiscourse is appropriate and helpful in various parts of different kinds of texts. On these matters, as Lindgren (1982) points out, scholars and researchers differ widely. Some claim that all metadiscourse is a waste of words, comparable to "throat-clearing" in speech (see Wydick, 1979, p. 63). Others claim that metadiscourse helps make a text "friendly" (Singer, 1986), and that it can help writers "tune writing to an audience and to clarify how the parts of an argument fit together" (Lindgren, 1982, p. 177). And still others assert that the use of kinds of metadiscourse is merely a matter of personal taste.

In the light of many researchers' concern with only the propositional domain of texts, it is not surprising that the empirical work that might help sort through and respond to the claims cited above has not been done. Indeed, there has been little study of the effects of kinds of metadiscourse in various kinds of texts. Much of the work on metadiscourse and metacommunication has been on spoken, not written, texts, and often it is primarily taxonomic or suggestive of future research directions (see Rossiter, 1974; Hewitt and Stokes, 1975; Donaldson, 1976; Mittowch, 1977; Keller, 1979; Schiffrin, 1980; and Ragan and Hopper, 1981).

The empirical work that has been done on the uses and effects of kinds of metadiscourse in written texts has focused on what are here called text connectives and

illocution markers. This work includes studies by Robertson (1966), Stoodt (1972), McClure & Steffensen (1980), Crismore (1980), and Meyer (1982). These studies have generally found that explicit connectives enhance comprehension, although different readers may be affected differently by the same connectives.

Therefore, it is still very much the case, as Crismore notes (1983), that little empirical work has been done on how the kinds of metadiscourse that fulfill interpersonal functions can affect the operations that readers apply to informative texts. Researchers face many significant questions about how such interpersonals affect readers as they perceive, process, comprehend, store, and recall texts conveying propositional meaning. Certainly anadequate model of the processes of reading and responding to texts should provide answers to these questions. And pursuing these questions might reveal interesting things about the structure of texts, the functions of elements of texts and the way in which different readers interact with texts.

There are several possible ways to begin pursuing the questions alluded to above. This study makes a beginning by examining how readers recall modality markers introducing clauses of propositional material. The main reasons for this procedure are that it is intuitively appealing to think that modality markers would have salient effects upon readers, that therefore the modality markers would at least be recalled, and that recall tests have been widely used in research on discourse processes.

Experimental Materials

Two short informative paragraphs that were available from earlier tests on other problems were adapted for use in this test. One of these was a paragraph with a constant topic. In such a form either the same topic or a slight modification of it appears in each sentence. The

topic of a sentence is that which the sentence is about, that which the sentence comments on; it usually corresponds to given information and is expressed in the syntactic subject. To this common topic located near the beginning of each sentence are linked different bits of new information (information that is not expressed in, is difficult to derive from, or is relatively less accessible in prior sentences). Therefore, in such a paragraph each sentence after the first moves from a topic expressing identical or closely related given information to some new information. The particular paragraph of this form adapted (called paragraph *a*) reads as follows (with the topics of all sentences after the first italicized):

> Research Writing is probably the most important course for college students. *The assignments for this course* are three short expository essays and two long and very difficult research papers. Thus *the course* requires a great deal of students' time. But *passing Research Writing* is almost synonymous with future success in college. *Some of the course's benefits* are a greater familiarity with the library and the development of organizational skills, analytic ability, and smooth writing style. *Some of its disadvantages* are cramped fingers, a sore back, and bloodshot eyes. *Research Writing* may be taken only by freshmen in the Humanities Division. (100 words)

The second paragraph adapted for this test (called paragraph *b*) was a kind of expository paragraph with "simple linear progression of topics" (Danes, 1974, p. 118). In such a paragraph, the information expressed near the end of the first sentence becomes (sometimes with some slight modifications) the topic and the syntactic subject of the second. The information expressed near the end of the second sentence becomes the topic and the syntactic subject of the third. This pattern continues throughout the paragraph, producing a chain of given and new information linking sentences. Again,

therefore, each sentence after the first moves from given to new information. The particular paragraph adapted appears below (with the topic of all sentences after the first italicized):

> All high–school seniors who plan to go on to college must take the American Novels course. *This course's required reading list* includes at least eight selected novels. *One of these* is Nathaniel Hawthorne's *The Scarlet Letter*. *This novel's main character* is a guilt–torn and extremely sensitive woman named Hester Prynne. *She* had been forced to wear a scarlet *A* by the Puritans of Boston. *The Puritans' chief characteristics* were ambition and a rigid morality. *This rigid morality* was one of the traits that Hawthorne criticized. However, *his criticism* was tempered by his open–mindedness. (93 words)

To prepare for the test, a five– or six– word clause of metadiscourse was added to the beginnings of four sentences in paragraph *a*, which has seven sentences. These clauses are modality markers. The four clauses read as follows: *It is my firm conclusion that, Thus I can say without hesitation that, It is my private opinion that,* and *I am quite sure that*. These clauses were selected in order to be appropriate additions to sentences of paragraph a. The first of these clauses was added to the beginning of the first sentence of paragraph a, the second of these to the beginning of the third sentence, the third of these to the beginning of the fifth sentence, and the fourth of these to the beginning of the seventh sentence. Hereafter this paragraph with the metadiscourse added will be called a–meta.

Paragraph a–meta reads as follows:

> It is my firm conclusion that Research Writing is the most important course for college students. The assignments for this course are three short expository essays and two long and very difficult

research papers. Thus I can say without hesitation that the course requires a great deal of students' time. But passing Research Writing is almost synonymous with future success in college. It is my private opinion that some of the course's benefits are a greater familiarity with the library and the development of organizational skills, analytic ability, and smooth writing style. Some of its disadvantages are cramped fingers, a sore back, and bloodshot eyes. I am quite sure that Research Writing may be taken only by freshmen in the Humanities Division.

A similar operation was applied to paragraph *b*, which has eight sentences, except that different individual clauses of metadiscourse were added. Again, however, these clauses are modality markers, and they were selected in order to fit the appropriate sentences in paragraph *b*. These four clauses read as follows: *It is the department's position that, It is an undeniable fact that, We can say without reservation that,* and *It has always been clear that*. The first of these was added to the beginning of the first sentence in paragraph *b*, the second of these to the beginning of the third sentence, the third of these to the beginning of the fifth sentence, and the fourth of these to the beginning of the seventh sentence. Hereafter this paragraph with the metadiscourse added will be called b–meta.

Paragraph b–meta reads as follows:

It is the department's position that all high–school seniors who plan to go on to college must take the American Novels course. This course's required reading list includes at least eight selected novels. It is an undeniable fact that one of these is Nathaniel Hawthorne's *The Scarlet Letter*. This novel's main character is a guilt–torn and extremely sensitive woman named Hester Prynne. We can say without reservation that she had been forced to wear a scarlet *A* by the Puritans of Boston. The Puritans' chief characteristics were

ambition and a rigid morality. It has always been clear that this rigid morality was one of the traits that Hawthorne criticized. However, his criticism was tempered by his open–mindedness.

In sum, four of the seven sentences in paragraph a–meta begin with clauses of metadiscourse, as do four of the eight sentences in paragraph b–meta. In all of these particular sentences the clauses of metadiscourse serve as main clauses. In the remaining sentences in these paragraphs, the main clauses express propositional material.

Subjects

The subjects (n=38) were sophomores from a middle–class, predominantly white, moderately–sized high school in the suburbs of Chicago. They were academically heterogeneous; some of the best and some of the poorest students in that sophomore class were represented. At the time of the test, nearly fifty percent of these students indicated that they intended to go on to college.

Experimental Procedure

Two groups of nineteen subjects were assembled at random. First, so that they could adjust to the experimental task, they were taken through a practice session. All of them read a practice paragraph chosen from a college catalog because it is about as long (98 words) as a–meta and b–meta, and not because of the nature of its propositional or interpersonal meanings.

The subjects were told to read the paragraph at their own speed as attentively as possible, trying to remember as much of it as possible. Moreover, they learned that they were to read the paragraph only once; they were to try to keep their eyes from flitting back to sentences that they had already read. Their reading times varied very slightly. Immediately after they read the paragraph, they were to attempt to reproduce it in writing as fully and accurately as possible, trying to keep the

sentences in order, but recording whatever phrases and words they could recall in any order once they started to encounter gaps or questions about elements and the order of elements in their memories. Their writing time was unlimited.

A few minutes after all finished this practice session and without reviewing how well they did recalling the practice paragraph, each one of the two groups read one of the paragraphs with metadiscourse. They were instructed to proceed exactly as they had in the practice recall session.

When their written protocols were examined, counts were made of the number of correct words of propositional discourse in each, the number of correct words of modality markers in each, and the number of modality marker intrusions. Individual words of modality markers rather than idea units or propositions were counted primarily because it probably is misleading to think of clauses functioning interpersonally in terms of idea units or propositions. And thus for the sake of consistent later comparisons between metadiscourse and propositional discourse, individual words of propositional discourse were also counted. Finally, a tally was made of the number of subjects who recalled no metadiscourse whatsoever, and the number of subjects who recalled metadiscourse from only the first or the seventh sentence of the paragraph that they had read. The recall of these latter subjects could be due principally to primacy or recency effects.

Results

The results were analyzed and evaluated as follows: first, for each subject a percentage was derived by dividing the number of propositional words each recalled from a paragraph by the total number of propositional words in that paragraph. Another percentage for each

subject was derived by dividing the number of words of modality markers each recalled from a paragraph by the total number of words of modality markers in that paragraph. Then the mean percentage of propositional words and the mean percentage of words of metadiscourse recalled by the nineteen subjects who read and recalled one of the paragraphs were calculated. Finally, for each paragraph a dependent *t*–test was used to determine whether the difference between the mean percentage of propositional words and words of metadiscourse was statistically significant. These data would help compare how well readers recalled propositional material with how well they recalled modality markers. And thus these data would give the first clues about how modality markers affect readers.

The nineteen subjects who read paragraph a–meta recalled a mean of 29.77% of the propositional words and a mean of 25.4% of the modality markers. Running a dependent *t*–test on the difference between these mean percentages produced a *t* of 1.14 ($p = .269$).

The nineteen subjects who read paragraph b–meta recalled a mean of 20.59% of the propositional words and a mean of 16.67% of the modality markers. In this case the *t*–test produced a *t* of 1.35 ($p = .193$).

Table 1 Recall of propositional material and modality markers from full paragraphs

	mean percentage of propositional material recalled (standard deviation)	mean percentage of modality markers recalled (standard deviation)	*t*	*p*
para a–meta	29.77 (.137)	25.4 (.144)	1.14	.269
para b–meta	20.59 (.082)	16.67 (.108)	1.35	.193

In both cases, subjects recalled a smaller percentage of metadiscourse than they did of propositional discourse. However, in neither case were the differences between the mean percentages statistically significant. On the basis of these data, therefore, it is impossible to begin discussing whether the modality markers used in these tests affect readers' memories any differently from the way that propositional material does.

On closer examination of the two experimental paragraphs, though, it was discovered that there was probably a built–in bias in their structure in favor of the modality markers. That is, each paragraph begins with a six–word clause marking modality. And Gomulicki has shown that at the beginning of a passage "attention is paid to everything. The opening words are thus likely to be well recalled, whatever their nature" (1956, p. 91).

Therefore, it is possible that the mean percentages of modality markers recalled are fairly high simply because each paragraph begins with six such words. A glance at the numbers of subjects who recalled modality markers from only the first sentence of the paragraph they had read adds credibility to this possibility. For in the case of each paragraph many subjects who recalled some modality markers did so from only the first sentence. The numbers are as follows: 10 subjects for paragraph a–meta, and 14 for b–meta. To count all the words of metadiscourse recalled, then, probably leads to a false impression of how it actually affects readers' memories.

Thus it was decided that a more appropriate way to examine the results of the recall test was to derive new percentages, this time not counting any of the words conveying modality judgments and propositions from the first sentence in each paragraph. The counts were started with the second sentence, with comparisons of the number of propositional words recalled to the number

possible and of the number of modality markers to the number possible. The governing assumption was that by the second sentence the kind of special attention that readers give to the first few words of passages would have largely changed into the kind of attention they normally give material within a passage. And starting the counts with the second sentence led to some striking data.

From the beginning of the second sentence to the end of paragraph a–meta, the subjects recalled a mean of 24.32% of the propositional material and a mean of 7.43% of the modality markers. The dependent *t*–test produced a *t* of 5.16 ($p < .001$).

From the beginning of the second sentence to the end of paragraph b–meta, the subjects recalled a mean of 13.52% of the propositional words and a mean of 1.17% of the modality markers. Here the *t*–value is 6.05 ($p < .001$).

Table 2 Recall of propositional material and modality markers from partial paragraphs

	mean percentage of propositional material recalled (standard deviation)	mean percentage of modality markers recalled (standard deviation)	*t*	*p*
paragraph a–meta	24.32 (.138)	7.43 (.124)	5.16	<.001
paragraph b–meta	13.52 (.082)	1.17 (.051)	6.05	<.001

From this perspective, what is striking about the recall tests is that the modality markers are recalled far less well than the propositional material. In fact, very few modality markers are recalled. In this connection, it is interesting that in the case of both paragraphs some students recalled no modality markers whatsoever. Two

recalled none from paragraph a–meta, and four recalled none from b–meta.

It is tempting to conclude that modality markers affect readers differently from the way that propositional material does. If this is true, then an interesting question to ask is whether the modality markers in these paragraphs functioned as an aid to memory of the propositional material. To seek an answer, thirty–eight different high–school sophomores were assembled at random. These students were similar in academic skills and goals to the students described above. They were randomly divided into two groups of nineteen, each of which went through a recall experiment identical to the one described above but on one of the paragraphs *a* or *b*, those without the modality markers. In these subjects' protocols the number of correct words recalled was calculated. Then these figures were compared with those for all of the words of propositional material recalled in the experiment on paragraphs a–meta and b–meta. Paragraphs in their entireties were considered in order to give all of the clauses marking modality, including the first in each paragraph, all possible credit that they might deserve for aiding in the recall of propositional material.

In both cases subjects recalled fewer words of propositional material from the paragraphs with the modality markers. The means are as follows: from paragraph *a* 30.33 words, from paragraph a–meta 26.79 words; and from paragraph *b* 37.42 words, from paragraph b–meta 21 words.

To be even fairer to the modality markers, the numbers of words of propositional material recalled from the first, third, fifth and seventh sentences—the sentences beginning with the clauses marking modality—of the two paragraphs a–meta and b–meta were calculated and compared with the numbers of words of propositional material

recalled from the corresponding sentences in paragraphs *a* and *b*. Perhaps modality markers function as an aid to memory of the propositional material expressed in the same sentence that they are.

Again, however, the figures argue against this. In all cases, certain subjects recalled fewer words of propositional material from the sentences beginning with modality markers in a–meta and b–meta than others did from the corresponding sentences in a and b. The mean numbers of propositional words recalled from the appropriate sentences in the corresponding paragraphs are as follows: from paragraph *a* 16.67 words, from paragraph a–meta 13.47 words; and from paragraph *b* 26.21 words, from paragraph b–meta 16.63 words. Apparently, then, in these cases modality markers did not serve as an aid to the recall of the propositional material expressed in sentences with them.

Discussion

Before discussing these results at length, several caveats should be noted. First, the data reported here emerged from only one kind of test. Second, the subjects, all of whom were high school sophomores, probably did not employ as many kinds of reading styles and strategies as larger and more diverse groups of readers might employ. Finally, it is also true that the materials used in this experiment contain a higher concentration of full–clause modality markers than one would find in most naturally occurring texts.

Nevertheless, this experiment, with two different paragraphs and a fairly large sample of subjects, provides good evidence that modality markers such as are used here are scarcely recalled and do not help subjects recall the propositional material that is associated with them. And from one point of view one could argue that subjects should recall a significant number of modality markers.

After all, the modality markers are heavily represented in the paragraphs, they appear in rather marked or noticeable form (*It has always been clear that* rather than *clearly*, for example), they appear in the rather prominent beginning portion of sentences, they are quite evenly distributed throughout the paragraphs, and the subjects were instructed to try to recall all of a relatively short paragraph.

How, then, can one explain the results? There are at least six possible explanations, the last of which is the most probable one.

In the first place, since the modality markers do not expand propositional material, do not contribute to the gist of a passage, it is possible that readers classify them as unimportant to the gist and disregard them. Perhaps this happens very quickly. It is conceivable that readers are able to distinguish modality markers from propositional content as soon as they perceive and comprehend them, that the readers then disregard the modality markers, and that all of this happens so quickly that the readers' processing of the propositional content is not affected in any measurable way.

However, since the strings of modality markers occupy the slot or slots in the experimental sentences where readers probably look first to discover the topics of those sentences and good clues to the gist of the experimental paragraph, it may be that readers process sentences beginning with modality markers by starting with the belief that these elements are what the sentence is about. Quickly they realize that the modality markers are not what the sentence is about and decide that they can disregard them. Through these processes, however, their attention to the propositional material is delayed and perhaps vitiated. There is evidence for this in that the modality markers apparently interfered with subjects' memory for propositional material expressed in the same sentence with them. As readers proceed farther and

farther into a text, though, they might have to spend less time distinquishing modality markers from propositional content, primarily because they become more and more confident about the gist of the text.

The common element in both of these scenarios associated with the first explanation is that readers disregard modality markers since they do not contribute to the propositional gist of a passage. A second and closely related overall explanation is that readers disregard modality markers if the situation of or purpose for reading does not demand that they pay close attention to them.

In this experiment, subjects were asked to recall paragraphs. But recall might have been directly associated in the subjects' minds with propositional meaning, not with interpersonal meaning. For this reason subjects could have disregarded the modality markers.

But this might not have happened in another kind of experimental situation. Suppose that the subjects had been asked to read and evaluate the truth value of the experimental texts. After doing this, they might have recalled a significant number of modality markers, primarily because the modality markers would be intimately involved with the experimental task.

Although both the first and the second explanations are consistent with the experimental results, both are somewhat startling and counter–intuitive. For they suggest that elements that writers use in texts to signal their assessment of the truth value of propositional content are disregarded by readers, either in all cases or in cases that do not call attention in some way or other to such truth values.

Must we assign no role or a very limited role in discourse processing to such modality judgments, judgments that seem to be necessary for healthy debate,

refined discernment, the acknowledging of various perspectives on things, and ethical worlds of discourse? It is somewhat difficult to accept such an assignment since modality markers appear often in the most admired prose, and since it is easy to bring to mind speakers or writers who have become embroiled in arguments since they used modality markers that their addressees regarded as inappropriate. At the same time, it is easy to think of people who have avoided or have worked their way out of harsh arguments through the tactful use of modality markers. Moreover, some writers go so far as to assert that the "major content of an utterance is often found in the modal operations rather than in the ostensible content" (Kress and Hodge, cited in Ruthrof, 1981, p. 196).

A third possible explanation is that readers disregard the exact words expressing a modality judgment almost as soon as they comprehend them but that they retain a kind of modal tag that they attach in long-term memory to the propositional information that they store. They could, therefore, hold a proposition in long-term memory with a tag indicating uncertainty attached to it. Or they could hold a proposition in long-term memory with a tag indicating high probability attached to it.

If this is the case, such tags would not be revealed in a recall test, mainly since the exact words from which they are derived are lost and since bracketing a statement with something like an uncertainty tag on a recall test would strike subjects as odd or impossible. To get at such tags, we would have to add to recall tests a task requiring subjects to indicate what level of validity they attach to the propositional information that they recall.

Moreover, if such tags exist, it would be important to determine whether or not they decay over time. In other words, would a process similar to the sleeper effect

(see Hannah & Sternthal, 1984) operate on the tags? Would the tags erode and leave readers only with propositions that they regard as certain, not with some that are certain, some probable, and some doubtful?

A fourth possibility is derivable from generalizing ideas associated with the third. Perhaps as people read they try to do two things: (1) comprehend and remember the propositional information, and (2) establish a modal framework within which all the propositional information is to be viewed.

Perhaps when no indications of modality appear, readers regard all the information that they encounter within the modal framework of "Truth." But if they read some explicit modality markers, they use them to set their modal frameworks appropriately (for example, "Highly Probable," or "Doubtful") and then drop individual words of the modality markers. The modal framework then stays the same until other modality markers appear and cause a change in it.

In this experiment, the readers could have used the first clause marking modality to set their modal frameworks to something like "Most Certain," or "To be Stressed." They then could have forgotten the exact words of the first modality marker (although since in this case those words were the first in the passage, subjects often remembered them), and could have disregarded all subsequent modality markers after a quick inspection since they do not call for changes in the modal framework.

The third and fourth explanations can account for the experimental results, but neither of these is the most probable explanation. There is insufficient experimental evidence—here or elsewhere—for such tags or frameworks. And the fifth and sixth explanations seem more compelling.

The fifth explanation rests on the assumption that there are several different "planes" or "domains" of experience in texts (see Dillon, 1981, p. 114). One of these would be the propositional or ideational domain. Another would be the interpersonal domain. And since modality markers carry essentially interpersonal meanings, they would have effects within the interpersonal and not the propositional domain. Thus they would not be recalled, since recall of exact words is a process directly linked to the propositional domain.

Instead, modality markers could operate on a purely interpersonal level, in which exact words are not nearly as important as the feelings and attitudes that they stimulate. On this level, the interactions between a mind and a text could be very similar to the interactions between people (cf. White, 1984, p. 15). Thus modality markers could affect readers' feelings about the propositional material, their reactions to the voice projected in the writing, their attitudes about the writer's apparent overall purpose, their decision whether or not to share fully in the "cooperative experience" (White, 1982, p. 433) that the text offers. The modality markers could do all this without being recalled themselves.

If readers do indeed react to texts in a manner similar to the way in which they react to other people, how might they have responded to the paragraphs used in this experiment? Obviously, they would have tried to recall the propositional information. But at the same time, they would be reacting to the tone of or voice in the paragraphs. And in both experimental paragraphs the voice—using several emphasizing or stressing types of modality markers in a relatively short space—probably struck them as somewhat irregular. They could have viewed the writers as people trying too hard to get their point across and accepted, thereby belying a lack of confidence or a hidden agenda. In terms of this explanation, then,

the readers would be simultaneously engaged in two different kinds of processes—trying to comprehend and store the propositional information, and forming a personal reaction to the piece and its writers. The first process would reveal itself in a recall test; the second would not.

If this explanation is correct, researchers will have to devise and implement other kinds of tests. These tests, for example, would be designed to reveal such things as readers' reactions to and attitudes toward writers, subject matters, treatments of subject matters, roles that they are asked to play in texts, and roles that they are asked to play after reading the texts. Moreover, researchers may find that they have to classify their subjects much more finely than they do now. Different personality types may react differently to different kinds of roles within the interpersonal realm of meaning. Finally, researchers will probably have to be especially sensitive to potential interactions among all these kinds of variables, for in interpersonal matters, many forces can interact.

But even more important, an explicit model of the interpersonal domain, of interpersonal interactions in texts, should be developed. This could be used to construct many more questions for research than are detailed here. At the least this model should cast light on the following aspects of communicative interaction: that real people try to perform very specific kinds of actions on others, that they often do this by conveying different kinds of meaning symbolically in language, that they usually form this language into connected texts, that in these texts the different kinds of meaning can have complex relationships to each other, that writers or speakers project themselves in many ways into the texts and adopt stances on the meanings in the texts, that other people of particular natures engage the texts, that they have particular purposes for doing so, and that all

of this happens within a particular context, which may influence the transaction profoundly.

Such a model does not exist now. And since it will obviously be a very complex model, it will require a significant amount of time to describe and test. However, several researchers have begun to explore areas related to some of the aspects noted above. In particular, they have begun investigating how the nature of particular readers can affect discourse processes.

For example, Bruner (1971) reports on work that has explored the varying sensitivities of children from different social classes to expressions of uncertainty. Dutta and Kanungo (1975) have investigated how readers' positive and negative evaluations of different bodies of information affect their memory for that information. Van Dijk (1982) has examined how readers' beliefs, opinions, attitudes, and ideologies can influence their understanding of words, their formation of complex propositions, their establishing of local coherence, and their formation of global macrostructures. He shows how these processes may lead to a text representation that is different from what one might expect solely on the basis of a propositional analysis of the text. Additionally, Crismore (1984, April) has worked on how readers with different anxiety levels react to the projected presence of authors in texts. And Spiro (1982a, 1982b) has conducted tests that argue for incorporating readers' affective colorations and subjective evaluations of parts of texts into a model of discourse processes.

Although it appears that the model and tests of interpersonal interaction in texts that the fifth explanation calls for will be most helpful in working with many kinds of metadiscourse in the future, the fifth explanation may be more elaborate than the experimental results of interest here warrant. A sixth explanation is simpler.

This explanation assumes that modality markers stimulate an interaction between the propositional material that they are attached to and readers' knowledge and beliefs. And it proposes that modality markers will be recalled if they stimulate a clash between the claims of the propositional material and readers' knowledge and beliefs. Moreover, the explanation proposes that as the clash involves claims that readers have greater and greater stakes in, their memory for the modality markers will grow clearer and clearer.

On the other hand, if the modality markers stimulate no clash between the claims of propositional material and readers' knowledge and beliefs, they will probably not be recalled. And readers would probably pay less and less attention to them as they are associated with material that becomes even more removed from what they have a stake in.

For example, if people who know that the world is round were to read that "It is undeniably the case that the world is flat," they would probably recall the modality marker since it heightens a clash between what the propositional information of the sentence claims and what they know.

At the same time, if these people were to read that "It is undeniably the case that the world is round," they would probably wonder momentarily why someone would stress what nearly everyone knows to be a fact. But subsequently they would have no reason to hold the modality marker in memory. They would probably feel that it stresses needlessly what was obvious from the start.

Or consider an example that raises the stakes for some people. Those who believe in God and who were to read that "It is certain that God is dead" would most likely retain the "It is certain" and retain it well since it heightens a clash between the propositional claim and their

belief, and, even more, since that belief is supremely important to them.

However, if people who believe in the death of God were to read that "It is certain that God is dead," they would experience no clash between propositional claims and their beliefs and would therefore have no reason to retain the "It is certain" in memory.

The exact nature of how this would work is unknown. Perhaps readers hold the introductory modality marker in a buffer until they read the propositional information, then they judge to what extent the propositional information accords with their knowledge and beliefs. If the propositional information accords with their knowledge and beliefs, they disregard the modality marker if it stresses the propositional information, and retain it if it hedges the propositional information. Similarly, if the propositional information does not agree with the readers' knowledge and beliefs, they would retain the modality marker if it stresses the propositional information and drop it if it hedges the propositional information.

In this light, the results of the experiment reported here are what would be expected: the modality markers stressed propositional material, but that material was either known to subjects or in accord with their beliefs (for example, they already knew about the Puritans and Hester Prynne in *The Scarlet Letter*). Thus all their normal patterns of response to discourse gave them no reason to retain the modality markers, and these patterns provided a pressure stronger than that exerted by the demands of the recall test.

All of these explanations, of course, open up many possible avenues for future research, research designed to tease out the specific aspects of the nature of readers' actual responses to modality markers. The avenue of research that should perhaps first be pursued is that

leading to a delineation of subjects' knowledge and beliefs prior to a test. And the text passages should cause some clashes between propositional information and readers' beliefs that are heightened by modality markers. Material that readers do not believe should be stressed, and material that they do believe should be hedged. And other measures besides the recall test should be used. Reports from subjects about their reactions as they work through a passage sentence by sentence might be useful, as might post–test interviews with subjects about how they reacted to the modality markers.

Such research should answer the questions posed here. And it promises to answer other questions as well. Some of these have to do with modality markers. For example, when and why do people tend to "dress up" expressions of modality into full clauses? Are such forms more or less salient to readers than the congruent forms of modality? To what extent are dressed–up forms of modality associated with the verbal games that people play? (cf. Halliday, 1985, p. 340)?

Other questions for research have to do with other kinds of metadiscourse. For example, is it possible that some kinds of metadiscourse are especially appropriate or even necessary in some kinds of texts? If so, what conventions govern their use and how are these learned? How closely connected to the social and cultural order are uses of metadiscourse? On the other hand, are some kinds of metadiscourse essentially inappropriate in certain kinds of texts?

Finally, other questions are related to the relationship between metadiscourse and the psychology and skills of particular readers and writers. Might heavy or light uses of some kinds of metadiscourse be related to writers' grasps of their subjects or to their rhetorical, cognitive or emotional development? Or do readers at different

points on such scales react differently to different kinds of metadiscourse? Some suggestive work along these lines has been done. For example, Nelson (1975) provides evidence that some people from early childhood on seem to be more attuned to the interpersonal domain of meaning than are others. It would be interesting to study how people more attuned to the interpersonal domain develop their personalities and move through the educational system. Halliday (1970) suggests that language in its interpersonal function has an essential role in the development of personality and in the success of individuals at school.

All these questions will probably be difficult to answer. But the effort should be worthwhile. For it promises to cast light on modality markers, other kinds of metadiscourse, and the nature of human interactions in texts.

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Typographic Cues as an Aid To Learning from Textbooks

The design of this article responds to its content, demonstrating the computer's effectiveness as a tool for design rather than as a source of creativity. The one typeface used in this design begins to set up a transparency which lets the author's message come through clearly.

Typographic Cues as an Aid to Learning from Textbooks

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ABSTRACT

Writers, editors, designers, and teachers all play important roles in developing students' abilities to comprehend, learn, and retain information. From primary grades through college, students are faced with increasing amounts of information in text books. As the information increases in quantity and complexity, the organization of the information plays a more important role in the student's ability to find and comprehend the important concepts.

This investigation proposes a method to identify important categories of information within a particular subject area and to rank these categories by importance creating a hierarchy of information. From this, a hierarchy of typographic cues is developed and matched to the hierarchy. The degree of typographic emphasis indicates position in the hierarchy.

Tests show that typographic cues assigned to each rank aid the learning process, provided the number of cues is less than three. Understanding these principles and their potential applications will aid publishers and designers of textbooks to more effectively organize information.

Introduction

An integral part of the educational process is to structure learning situations in ways that provide the greatest understanding and maximum retention of information found in textbooks. Comprehension is the ultimate goal of reading textbooks and is dependent upon mental operations that occur while reading. Levels of comprehension are inferred from the way readers respond to what they have read.

Organization of written information is an important factor relating to reader comprehension. As Conant, in Gage and Berliner (1984) points out, it is important to keep written material logically organized, otherwise, the reader's comprehension of the material will suffer. Gage and Berliner (1984) note that, "the use of structure is something that when pointed out to the students, makes their learning more efficient, better remembered and more useful." It is important for "students to see a framework of facts, concepts and rules that they are being asked to learn."

How do we specify ways in which information is to be structured so that it can be grasped by the learner?One way of presenting information is at the conceptual level. Wadsworth, in Piaget's theory of cognitive development (1979), observed that children are ready to develop a particular concept when and only when they have acquired the schemata that are necessary prerequisites. Educators prefer students to have a conceptual understanding of a subject rather than learning disjointed facts.

This study proposes that written information may be structured according to a defined set of common attributes. This structure will enable the reader to discriminate between various levels of information and make generalizations about the information contained in each level. The proposed vehicle by which the reader is made aware of the structure is the typographic cue.

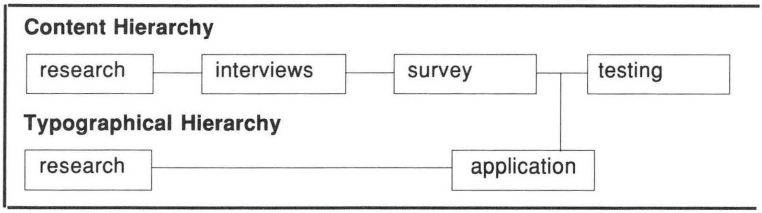
Stimulus properties applied to structural information differentiates between elements in the structure. The ability (of the student) to perceive the varied stimuli results in a heightened response level. Hershberger and Terry (1965) found that typographic cuing helps the reader identify and distinguish various categories of information thereby allowing a student to adjust his style of reading to levels of importance. In turn, the reader will learn proportionally more of what he reads.

In preparing instructional materials, textbook designers can manipulate stimulus properties, such as typographic cues, to improve the learning response, particularly when these stimulus characteristics serve to identify information that is important for the student to remember. Cues help to differentiate several categories of information differing in importance. Drawing on the aforementioned research as a foundation, this study proposes a method for the assignment of typographic cues as stimuli to structure information, within a textbook environment, which will enhance the learning and information retention capabilities of the respondent.

Design of this system follows: first, identify important types of information within a particular subject area; second, develop a hierarchy of typographic cues; third, match the hierarchy of categories of information with the hierarchy of typographic cues. Thus, the reader will be able to identify the commonality or differences of the categories of information through the similarities or differences of typographic cues.

The results of this investigation act as a suggested approach for the effective organization of information intended to enhance the comprehension of and retention of textual material. Figure 1 explains the development of materials to support this study.

Figure 1 Development of materials to support study



Research Methods

Phase One: Identifying a Hierarchy of Information

The first problem was to identify a hierarchy of information. Five professors from Chicago universities were interviewed. They were identified by calling colleges in the Chicago area and asking to speak to their specialists in American History. These professors were asked which kinds of American History information were important for students to remember. A list of six major categories of information was defined: Cause–effect Relationships, Localized Geography, Physical/Cultural Geography, Major Trends and Developments, Dates, and People.

In order to establish a hierarchy of importance for these various topics, a self–report survey was constructed. This survey listed the six categories of information with instructions to indicate the importance of each category on a 4–point scale (where 4 = very important and 1 = not important). This survey was mailed to fifteen professors who specialized in American History.

Discussion

Results indicated that these professors felt that the Cause–effect Relationships were the most important category of information. Major Trends and Developments were the second most important. Localized Geography was the third. Physical/Cultural Geography ranked fourth. People were the least important. Thus any American History textbook should highlight these categories.

Table 1 Mean results of a hierarchy of information from fifteen American History Professors

Cause–Effect Relationships	Major Trends & Developments	Local Geography	Physical/ Cultural Geography	Dates	People
3.86	3.73	3.30	2.20	2.20	2.16

Phase Two: Testing Importance of Typographic Cues

The second problem was to test the importance of typographic cues. This hierarchy was based on research conducted by Herbert Spencer, Linda Reynolds, and Brian Coe (1973b) on a "Comparison of the Effectiveness of Selected Typographic Variations." To quote Spencer, Reynolds, and Coe (1973b), the aim of their study was "to compare the effectiveness of certain typographic variations which might be used to make distinctions between the logical elements comprising a piece of text." Materials that have clearly defined logical structures should be presented with sub–units clearly distinguishable from one another. From their study, a hierarchy of four typographic variations or cues were subjectively selected for this study. These cues included: Univers 75 (Most Important), Univers 65 (Somewhat Important), Univers 55 (Slightly Important), and Goudy Old Style (Not Important).

An attitude questionnaire was given to eighty students at the Illinois Institute of Technology. These students were asked to rate the level of importance of these four typographic cues. This was to validate the results of Spencer, Reynolds, and Coe (1973b).

Results

The eighty students tested responded in the following way:

Table 2 Perceived Importance of Different Typefaces (percent of 80 cases)

importance	typefaces			
	univers 75	**univers 65**	univers 55	goudy old style
very	72.5%	28.7%	01.2%	03.7%
somewhat	10.0	57.5	18.8	11.2
slightly	10.0	07.5	63.7	16.2
not	03.7	02.5	11.2	65.0
no answer	03.7	03.7	05.0	03.7
	100.0	100.0	100.0	100.0

The results of the ranking of these typefaces by importance was consistent with the previous test of Spencer, Reynolds, and Coe (1973b). The results also validated the subjective cue values that were chosen.

Table 3 Paired Typographic Cue Hierarchies and Categories of Information

Univers 75	Cause–effect relationships
Univers 65	Major trends and developments
Univers 55	Localized Geography
Goudy Old Style	All information not included in above categories

Construction of the Independent Measure

The hierarchy of categories of information were paired with the hierarchy of typographic cues.

In order to protect the student from sensory overload, only three categories of information and three typographic cues were chosen. An American History textbook was selected based on the fact that this text contained no images, diagrams, photos, and only one typeface used throughout. At issue was whether this text could be divided into the three categories. Eight pages were randomly selected from this textbook (See figure 2). Information on these pages were divided into the above three categories.

Figure 2 The following two pages represent a sample of the original American History text.

Figure 2 Original American History text

with unprecedented rapidity until by 1890 it was almost complete and the frontier had disappeared.

The Plains region had long been known as 'the Great American Desert'; it was not, of course, a desert, but the designation had some justification. For over 200 years the American pioneer had moved westward from one woodland frontier to another, and in all that time it had never been necessary for him to make any radical readjustment to forest and prairie and stream. But when the pioneer came to the edge of the Great Plains he found an environment fundamentally different from that to which he was accustomed. Here was an immense grassland, sparsely wooded, with few navigable streams, and with a rainfall seldom sufficient for farming as practiced in the East. When the pioneer farmer tried to apply here the experience he had gained and the tools he had developed in the wooded East, he failed. 'The attempt,' as Walter P. Webb has said, 'of a migrating people to cross this line of the 96th or 98th meridian resulted in social chaos and economic ruin which continued until, through invention and much experiment, new weapons were adopted, new implements invented, new methods devised for getting water, making fences, and farming, until new institutions were evolved or old ones modified to meet the needs of a country that was level, devoid of timber, and deficient in rainfall; until a plainscraft took the place of woodcraft.'

Not until the 1870's did the industrial revolution, science, and invention come to the aid of the farmer and enable him successfully to invade the High Plains. Before he could establish himself permanently on the Plains four things were necessary: the elimination of the Indian; new methods of farming to cope with inadequate rainfall; a substitute for traditional wooden fencing; and transportation to take the crops to market. The army and the destruction of the buffalo took care of the Indian; barbed wire solved the fencing problem; the windmill, dry farming, and irrigation went far to overcome the effect of insufficient rainfall and intermittent droughts; and the railroad furnished transportation.

In the course of this long and arduous struggle with the Plains environment, the miner, the cattleman, and the farmer evolved institutions that differed markedly from those which had obtained in the woodlands of the East. The Plains environment necessitated a modification not only of the tools and methods of farming, but of social attitudes, economic concepts, political and legal institutions as well. 'The physical conditions

which exist in that land,' Major John Wesley Powell said, . . . are such that the industries of the West are necessarily unlike those of the East and their institutions must be adapted to their industrial wants. It is thus that a new phase of Aryan civilization is being developed in the western half of America.'

2. THE INDIAN BARRIER

The first step in the conquest of the last West was the solution of the Indian question. The Indians of the Great Plains and the Rocky Mountain regions, perhaps 225,000 in number, presented a formidable obstacle to white settlement. The strongest and most warlike of the tribes that the whites encountered were the Sioux, Blackfeet, Crow, Cheyenne, and Arapahoe in the north; the Comanche, Kiowa, Ute, Southern Cheyenne, Apache, and Southern Arapahoe in the south. Mounted on swift horses, admirably armed for Plains warfare, and living on the millions of buffalo that roamed the open range, these tribes for generations had maintained a stubborn and successful resistance to white penetration of their hunting grounds.

The first serious invasion came with the great migrations of the 1840's. The fate of the California Indians after the gold rush was prophetic of what was to happen elsewhere in the West. There were approximately 100,000 Indians in California in 1850; ten years later the number had been reduced to 35,000, and the Commissioner of Indian Affairs could write that 'despoiled by irresistible forces of the land of their fathers; with no country on earth to which they can migrate; in the midst of a people with whom they cannot assimilate; they have no recognized claims upon the government and are compelled to become vagabonds — to steal or to starve.' The advance of the miners into the mountains, the building of the transcontinental railroads, and the invasion of the grasslands by cattlemen, threatened the other Indian tribes of the West with the same fate. Most serious was the wanton destruction of the buffalo, indispensable not only for food but for hides, bowstrings, lariats, fuel, and a score of other purposes. Scarcely less ruinous were two other developments: the perfection of the Colt repeating revolver, fearfully efficient in Plains warfare, and the spread of smallpox, cholera, and venereal diseases among the Indians.

The story of Indian relations in the period from 1860 to 1887, the year

Construction of Reading Materials for Testing

Once the information was divided, the paired hierarchy of categories of information/hierarchy of typographic cues was applied. A total of eight letter–size pages were constructed. Of these eight pages, two pages used three typographic cues paired to categories of information. Univers 75 (Cause-Effect Relationships), Univers 65 (Major Trends and Developments), Univers 55 (Localized Geography), and Goudy Old Style (for all information not included in these categories). (See table 3 for a review of categories/cues). Two pages used two typographic cues Univers 75 (Cause–Effect Relationships) and Univers 65 (Major Trends and Developments), and Goudy Old Style (for all information not included in these categories). Two pages used one typographic cue, Univers 65 (Major Trends and Developments) and Goudy Old Style (for all information not included in this category). Two pages had no typographic cues. Only Goudy Old Style was used. (See figure 3a–3d).

Construction of the Dependent Measure

The effectiveness of using different typefaces was assessed by having the students read the material and then answer multiple choice questions testing their recall of the material read. The percent correct for information presented in the different typefaces was compared as the dependent measure.

Eighty students taking entry level courses at the Illinois Institute of Technology were subjects for the study.

Data Collection Procedure

Students completed the questions during regular class sessions. Before the materials were distributed, students were given a brief description of the study. Once the materials were distributed, students were instructed to read the introduction and instructions, and then the paired eight pages of reading materials from the American History textbook.

Figure 3a 4 cues/page 1 of 2

The roaring vitality, the cascading energy of the American people in the postwar years, is nowhere better illustrated than in the history of the West. **The generation after the Civil War witnessed the most extensive movement of population in our history; a doubling of the settled area; the rapid development of this population from primitive society to contemporary standards of civilization; the final disappearance of the wild Indian; the rise and fall of the mineral empire and of the economic life articulated to the geography and climate of the High Plains and the Rocky Mountains; and the organization of a dozen new states with a taste for social and political experiment.**

The most notable of these achievements was the conquest of the Great Plains - that region extending roughly from longitude 98 to the Rocky Mountains, and from Texas to the Canadian Border. This vast area, comprising roughly one-fifth of the United States, had long interposed a formidable barrier to settlement. **In the decade of the 'forties the westward frontier had reached the edge of the Plains. Then, instead of moving progressively westward as it had always heretofore done, the frontier leaped 1500 miles to the Pacific coast. For 30 years the intervening territory was practically uninhabited except by Indians and Mormons; not until the decade of the 'seventies did permanent settlers begin to close in on the Plains and Mountain regions; then the process went on with unprecedented rapidity until by 1890 it was almost complete and the frontier had disappeared.**

The Plains region had long been known as 'the Great American Desert'; it was not, of course, a desert, but the designation had some justification. For over 200 years the American pioneer had moved westward from one woodland frontier to another, and in all that time it had never been necessary for him to make any radical readjustment to forest and prairie and stream. But when the pioneer came to the edge of the Great Plains he found an environment fundamentally different from that to which he was accustomed. Here was an immense grassland, sparsely wooded, with few navigable streams, and with a rainfall seldom

sufficient for farming as practiced in the East. When the pioneer farmer tried to apply here the experience he had gained and the tools he had developed in the wooded East, he failed. **'The attempt,' as Walter P. Webb has said, 'of a migrating people to cross this line of the 96th or 98th meridian resulted in social chaos and economic ruin which continued until, through invention and much experiment, new weapons were adopted, new implements invented, new methods devised for getting water, making fences, and farming, until new institutions were evolved or old ones modified to meet the needs of a country that was level, devoid of timber, and deficient in rainfall; until a plainscraft took the place of woodcraft.'**

Not until the 1870's did the industrial revolution, science, and invention come to the aid of the farmer and enable him successfully to invade the High Plains. **Before he could establish himself permanently on the Plains four things were necessary; the elimination of the Indian; new methods of farming to cope with inadequate rainfall; a substitute for traditional wooden fencing; and transportation to take the crops to market. The army and the destruction of the buffalo took care of the Indian; barbed wire solved the fencing problem; the windmill, dry farming, and irrigation went far to overcome the effect of insufficient rainfall and intermittent droughts; and the railroad furnished transportation.**

In the course of this long and arduous struggle with the Plains environment, the miner, the cattleman, and the farmer evolved institutions that differed markedly from those which had obtained in the woodlands of the East. The Plains environment necessitated a modification not only of the tools and methods of farming, but of social attitudes, economic concepts, political and legal institutions as well. 'The physical conditions which exist in that land,' Major John Wesley Powell said,'... are such that the industries of the West are necessarily unlike those of the East and their institutions must be adapted to their industrial wants. It is thus that a new phase of Aryan civilization is being developed in the western half of America.'

Figure 3b 3 cues/page 1 of 2

The first step in the conquest of the last West was the solution of the Indian Question. **The Indians of the Great Plains and the Rocky Mountains regions, perhaps 225,000 in number, presented a formidable obstacle to white settlement.** The strongest and most warlike of the tribes that the whites encountered were the Sioux, Blackfeet, Crow, Cheyenne, and Arapahoe in the north; the Comanche, Kiowa, Ute Southern Cheyenne, Apache, and Southern Arapahoe in the south. **Mounted on swift horses, admirably armed for Plains warefare, and living on the millions of buffalo that roamed the open range, these tribes for generations had maintained a stubborn and successful resistance to white penetration of their hunting grounds.**

The first serious invasion came with the great migrations of the 1840's. The fate of the California Indians after the gold rush was prophetic of what was to happen elsewhere in the West. **There were approximately 100,000 Indians in California in 1850; ten years later the number had been reduced to 35,000,** and the Commissioner of Indian Affairs could write that 'despoiled by irresistible forces of the land of their fathers; with no country on earth to which they can migrate; in the midst of a people with whom they cannot assimilate; they have no recognized claims upon the government and are compelled to become vagabonds-to steal or to starve.' **The advance of the miners into the mountains, the building of the transcontinental railroads, and the invasion of the grasslands by cattlemen, threatened the other Indian tribes of the West with the same fate. Most serious was the wanton destruction of the buffalo, indispensable not only for food but for hides, bowstrings, lariats, fuel, and a score of other purposes. Scarcely less ruinous were two other developments: the perfection of the Colt repeating revolver, fearfully efficient in Plains warfare, and the spread of smallpox, cholera, and veneral diseases among the Indians.**

The story of Indian relations in the period from 1860 to 1887, the year of the Dawes Act, is a melancholy tale of intermittent and barbarous warfare, broken pacts and broken promises, greed and selfishness,

corruption and maladministration, of alternating aggression and vacillation on the part of the whites, of courageous defense, despair, blind savagery, and inevitable defeat for the Indians. President Hayes observed in his annual message of 1877, 'Many, if not most, of our Indian wars have had their origin in broken promises and acts of injustice on our part.'

Until 1861 the Indians of the Plains had been relatively peaceful, but in that year the invasion of their hunting grounds by thousands of frantic and ruthless miners, and the advance of white settlers along the upper Mississippi and Missouri frontier, together with dissatisfaction at their treatment by the government and the breakdown of the reservation system, resulted in numerous minor conflicts. In 1862 the Sioux of the Dakota region went on the warpath, devestated the Minnesota frontier, and massacred and imprisoned almost a thousand white men, women, and children. Retribution was swift and terrible and fell indiscriminately upon the innocent and the guilty. For the next 25 years Indian warfare was constant, each new influx of settlers driving the redskins to acts of desperation which brought on renewed outrage and punishment. In 1864 the Cheyenne, banished from their hunting grounds to the wastes of southeastern Colorado, attacked Ben Halliday's stages and harried the mining settlements to the north; they were persuaded to abandon their depredations and concentrate at Indian posts, and at one of these posts **Colonel Chivington ordered a savage slaughter of the Indian men, women, and children which sent a thrill of horror through the nation.** General Nelson Miles called the Sand Creek Massacre the 'foulest and most unjustified crime in the annals of America,' but Denver hailed Chivington, a former Methodist minister, who exhibited his collection of a hundred scalps at a local theater. **Two years later a small force under Colonel Fetterman was in turn massacred by the embittered Sioux.** All through the following decade the Sioux fought desparately for their hunting grounds. **The climax came in 1875 when prospectors discovered gold in the Sioux reservation in the Black Hills. That summer General Sheridan was able to hold back the importunate gold-seekers, but the next spring they broke through**

The vast territory between the Missouri and the Pacific, first explored by the traders of the American and the Rocky Mountain fur companies, had been crossed and recrossed by emigrants along the great trails, but it was the miners who first revealed to the nation the possibilities of this country. The first frontier of the last West was the miners' frontier. In 1849 the lure of gold had drawn to California a turbulent, heterogeneous throng of miners who later formed the nucleus of a large permanent population and who developed the varied agricultural resources of the state. This process was to be repeated time and again in the decade of the 'sixties: in Colorado, Nevada, Arizona, Idaho, Montana, and Wyoming. In each case precious metals were the magnet that attracted the first settlers and advertised the resources of the territory; then, as the big pay dirt was exhausted, the mining population receded, and its place was taken by ranchers and farmers who established, with the aid of the railroads and the government, the permanent foundation of the territory.

In 1859 the discovery of gold in the foothills of the Rockies, near Pike's Peak, drew thousands of eager prospectors from the border settlements and from California, bent on repeating here the fabulous story of California gold. Within a few months the roads from Council Bluffs and Independence to western Kansas were crowded with wagons bearing the slogan 'Pike's Peak or Bust' scrawled on their canvas. Soon brash little mining camps dotted the hills all along Cherry Creek, a branch of the South Fork of the Platte. Denver City, Golden, Boulder, and Colorado City arose almost overnight, the Territory of Jefferson-changed later to Colorado-was organized, and the census of 1860 recorded a population of some 35,000. The mining boom soon spent itself, and the development of Colorado was somewhat retarded by the Civil War and Indian uprisings as well as by inadequate transportation and a failure to appreciate the agricultural and grazing resources of the country. During the ensuing decade population barely held its own; not until the silver strikes of the 1870's, the advent of the railroads, the influx of farmers, and the readjustment of the region to a new economic basis were the foundations for a sounder development laid. Colorado's silver output soared from 600,000 a year in 1870 to more than $3 million in 1874, and in 1877 silver smelters at

Leadville also began to turn out large quantities of lead. By 1880 Leadville, already the second city of Colorado, had 13 schools, 5 churches, and 28 miles of streets; its annual silver production soon outdistanced that of any foreign country save Mexico.

In the same year that gold was discovered in Colorado came the announcement of a rich strike of silver on the eastern slopes of the Sierra Nevada, near Lake Tahoe. Here was located the Comstock Lode, one of the Richest veins in the world. Within a year the roaring towns of Virginia City, Aurora, and Gold Hill sprang up in the desert waste, the Territory of Nevada was carved out of Utah, and 10,000 men were digging frantically in the bowels of the earth for the precious silver stuff.

Nevada furnishes the most extreme example of a mining community; nowhere else in history do we find a society so completely and continuously dependent upon minerals. And the history of this mining commonwealth for the first decade of its existence is largely that of the Comstock Lode. Within 20 years the lode yielded no less that $306 million. Very little of these enormous riches, however, remained in Nevada, most of it going to California mining companies or to speculators in the East. The Comstock Lode is notable not only as the foundation of the mineral wealth of Nevada, but as the location of one of the greatest engineering enterprises of the nineteenth century-the Sutro Tunnel. This tunnel, built by Adolph Sutro over a period of eight years and penetrating into the heart of the mountain to the depth of three miles, was a technical marvel; unhappily, it was finished just as the mines were failing.

The application of engineering skill, machinery, and capital to the Comstock illustrates a process that was universal in the history of the mining kingdom. **Panning and placer mining as practiced in the diggings of early California and Colorado were wasteful, and the change from placer mining to quartz mining required the purchase of expensive machinery, the hiring of engineering skill, and the organization of mining as a big business. So outside capital came in and took over the mining industry; the miners became day laborers working for wages, and the profits went to stockholders scattered throughout the United States and Europe.**

One of the most dramatic shifts in the screen-picture of the West was the replacement of millions of Buffalo that had roamed the Great Plains by cattle, and of the Indian by the cowboy and the cattle king. The territory between the Missouri and the Rockies, from the Red river of the South to Saskatchewan-an area comprising approximately one-fourth of the United States-was the cattle kingdom, the last and most picturesque American frontier. Here millions of Cattle -Texas longhorns, full-blooded Herefords, Wyoming and Montana steers-fatted on the long luscious grasses of the public lands. The cowboys and their liege lords, the cattle barons who ruled this vast domain, developed therein a unique culture, folklore, and society.

The development of the cattle industry on a large scale was due to a peculiar combination of factors: the opening up of the public domain after the Civil War, the elimination of the Indian danger and the annihilation of the buffalo, the extension of the railroads into the High Plains, the decline in the number of cattle raised in the Middle West and the East, the increases consumption of meat here and abroad, the invention of the refrigerator car, and the growth of great packing centers and of world markets.

Since the days when the American Southwest belonged to Spain, the sturdy Texas longhorn, descendant of Spanish toros from the plains of Andalusia, had grazed on the limitless prairie grasses north of the Rio Grande. It was not until 1846 that the first herd, valued only for their hides, was driven northward to Ohio, though long before that many had found their way to California. In 1856 a drove of Texas cattle reached Chicago, but not until the middle 'sixties did the 'long drive' to the region of rich grasses and good prices cease to be an experiment. In 1867 the Kansas Pacific began to reach out in the Plains, and in the same year J.G.McCoy established the first of the cow towns, Abilene, Kansas, from which live cattle were shipped to slaughter houses in Chicago. The refrigerator car, in common use by 1875, delivered the western dressed beef to the great eastern centers of population.

On the first of the organized long drive, 35,000 longhorns pounded up clouds of dust all along the famous Chisholm Trail, across the Red and Arkansas rivers and into the land of the Five Nations, to Abilene, Kansas.

Two years later no less that 350,000 longhorned kine made their way along the Chisholm and Goodnight trails to fatten on the long northern grasses and find a market at one of the several roaring cattle towns on the Kansas and Pacific Railroad: Abilene, Dodge City, or Newton. Later the 'long drive' extended north to the Union Pacific and even to the Northern Pacific.

" In after years (writes the historian of the cattle kingdom) the drive of the Texas men became little short of an American saga. To all who saw that long line of Texas cattle come up over a rise in the prairie, nostrils wide for the smell of water, dust-caked and gaunt, so ready to break from the nervous control of the riders strung out along the flanks of the herd, there came a feeling that in this spectacle there was something elemental, something resistless, something perfectly in keeping with the unconquerable land about them."2

Altogether some 6 million cattle were driven up from Texas to winter on the High Plains of Colorado, Wyoming, and even Montana, between 1866 and 1888. It was this new industry of fattening cattle on the Great Plains that produced the last phase of the Wild West and the highest and most picturesque development of the ancient art of cattle droving. The experience of cattlemen along the Oregon and California trails in the decade of the 'forties had long proved the practicability of wintering cattle in the northern ranges. Now Easterners and Englishmen of a sporting or speculating turn put their money into cattle, establishing their headquarters anywhere from the Rio Grande to the Canadian border, and in the absence of law managed their affairs through some de facto commonwealth such as the Wyoming Stock Growers' Association. Texas borders who learned their horsemanship and 'cowpunching' from the Mexican vaqueros were the first and the best bucaroos or cowboys. Every spring they rounded up the herds in designated areas, all the way from Texas to Wyoming and the Dakotas, identified their owners' cattle by the brands, and branded the calves, dividing up pro rata the strays or 'mavericks'. The breeding cattle were then set free for another year while the likely three-and four-year-olds were conducted on the 'long drive' to the nearest cow town on a railway. Each 'outfit' of cowboys attended its owner's herd on the drive, protecting it from wolves and cattle rustlers, sending scouts ahead to locate water and the best grazing. The long drive seems romanitc in retrospect, but to the cowboys it was hard and often hazardous work. Andy Adams, later one of the cattle barons of Texas, describes a dry drive along the Old Western Trail:

Immediately after reading eight pages, students were asked to answer twelve multiple choice questions (three questions per two pages were chosen). Students were not allowed to look back at the eight pages. The paired eight pages were given to the students in different sequences. (See table 4).

Table 4 Four Cue Sequences Used Out of Possible 24

Sequence	1	2	3	4
Number of cues	3	2	1	0
	2	1	0	3
	1	0	3	2

Students were given as much time as needed to read all paired eight pages and answer all twelve questions. The study took between twenty and thirty minutes for each student to complete.

Results: the data were analyzed with respect to recall as measured by the number of questions answered correctly on the multiple choice test. Table 5 summarizes recall by page design.

The mean recall score for 0 cues = 1.53, 1 cue = 1.79, 2 cues = 2.10, 3 cues = 1.36. The mean number of questions answered correctly increased as the number of cues increased from zero cue to two cues. However, when three cues were added, the mean number of correct responses dropped below the number of correct responses for zero cues. The standard deviations for zero, one, two and three cues were 0.81, 0.80, 0.88, 0.93 respectively. The similar standard deviations for means of the four conditions made it possible to perform parametric statistics to examine the data for the four groups. Figure 4 graphically illustrates the relationship between the number of cues and level of recall.

Table 5 Results of Recall by Page Design

Number of Correctly Recalled Items	Number of Cues 0	1	2	3
Mean	1.52500	1.78750	2.06250	1.36250
Standard	0.81092	0.80652	0.87652	0.93109

Figure 4 Mean Correct Recall Scores and Standard Deviations

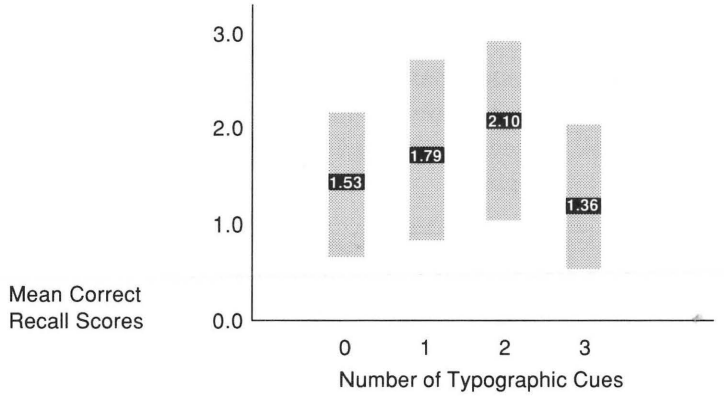


Table 6 shows the results of randomized block analysis of variance with kinds of cues as the independent variable. The randomized block analysis of variance was chosen because each subject experienced all of the cues. The analysis of variance produced an F–ratio of 316.15 (df = 4.316). This F–ratio was statistically significant at well beyond the .01 probability level. Thus, the hypothesis that mean correct response differed for the groups was confirmed.

Attitude Questionnaire

An attitude questionnaire was given to the eighty students after they answered the multiple choice questions to determine if the design of these pages were helpful. Seventy percent found the design helpful. Ten percent felt the pages were not helpful. Twenty percent had no response.

Table 6 F–Test forSignificance of Canonical Correlations Coefficient

	SS	DF	MS	F
Hypothesis	930.49	4	232.62	316.15
Error	232.51	316	.74	

Summary

The results of this study suggests that each successive added typographic cue resulted in increased learning until the third typographic cue was added. Under the 3 cue condition, the mean recall dropped below recall with 0 cues. Much was highlighted under the 3–cue condition indicating too much for a student to remember. Too many cues (three or more) are distracting, thus decrease learning. Typographic cues do affect learning as predicted.

The results support the hypothesis that: 1) categories of information can be identified within a particular subject area; 2) hierarchy of typographic cues can be developed; and 3) hierarchies of categories of information can be matched to hierarchies of typographic cues.

Thus, information which has a logical structure may be enhanced by the addition of typographic distinctions which are assigned to concept areas. The transfer of information may be increased if the reader is able to

perceive that an information structure exists. Visual typographic cues can aid the reader by highlighting this structure and differentiating between important and unimportant information, and thus enhance the learning process.

Discussion

There are two factors which determine a reader's response to a textbook. The first factor is the reader's attained knowledge. A student's familiarity with language structures, the breadth of their vocabulary, and their past experience are likely to have a profound effect on reading performance. The second factor is the reader's relationship to the text itself. Legibility of print, illustration and color, vocabulary, conceptual difficulty, syntax and organization of information also have an effect on reading performance. (This investigation has addressed only the organization of information.) A high level of comprehension can be achieved through a high level of reading performance and the effective organization of information in a text can raise this performance level. This concept could have significant implications for textbook designers. Currently, there is no formal visual language to govern the structure of information within textbooks. Designers wishing to produce more comprehensible texts could develop a visual structure through the definition of categories of information, organization of the categories and the assignment of typographic cues to the categories to aid in comprehension.

Though the tools of formal education have evolved to include such devices as computers and video, the textbook retains its position as the primary source of information in the classroom.

Further Implications of the Research

Publishing companies seek innovative design solutions that aid the learning process, and at the same time control development and production costs. Often the cost of an innovative design solution to an information communication problem is prohibitively high. Technological innovations, such as desktop publishing, have brought down the cost of publishing. What is needed now are cost efficient methods for the structuring of content which can be easily integrated with this technology.

This study is only a suggestion for textbook designers and publishers for the effective organization of information. The results of this investigation may be applicable to other tools of formal education, such as interactive video displays, television, and film. Structuring and cuing devices may be beneficial to students with low motiva-tion or reduced learning skills.

Informal learning situations may also benefit from a clearly structured approach to information presentation. For example, organization and cuing may help museum visitors comprehend an exhibit. Museum visitors are heterogeneous with diverse interests, attitudes, expectations, and backgrounds.

Interpretive information that is carefully organized and cued can stimulate and aid reception. This approach might extend to other informal situations such as complex instruction manuals or instructional steps found on some consumer packaging.

Research into the development of methods to improve formal learning situations is not new. This study has proposed the use of certain visual cues to enhance the transfer of information from print to thought. Further studies can be made which expand upon the conclusions drawn in this one. For example, how might a chromatic

cue system work? The use of cue systems for nonprint media, such as interactive computer systems or informal learning environments, such as exhibits and museums could be studied. How might a mixed cuing system such as spatial cues with temporal cues work?

This study demonstrates that information can be organized and typographically cued to make learning more efficient and better remembered. It is important to help students see a framework of facts, concepts and rules that they are being asked to learn. These principles and their potential applications to diverse information communication contexts can enhance meaning and remembrance.

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Meditation: Visual Transition as a Bridge Between Form and Meaning

Whereas the previous article was design using one typeface, this article employs t A system which incorporates both article content and images demonstrates the flex bility of type, and is more successful than design of the third, fourth, and fifth article

The book reviews which follow continue t demonstration, exapnding upon the possi bilities of the same two typefaces. As the number of elements such as typefaces, si styles and weights increase, it becomes n important for desktop publishers to have information and experience necessary to integrate them successfully.

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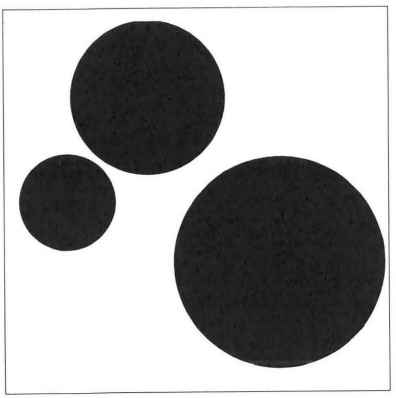
Visible Language, Volume XXII, Number 2/3, Spring 1988
Todd Cavalier, pp 297-327, ©Visible Language
Rhode Island School of Design , Providence, RI 02903

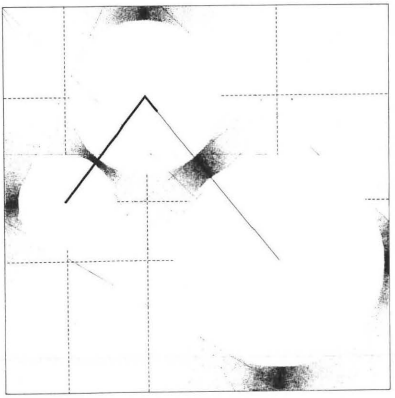
Meditation:

Visual Transition as a Bridge Between Form and Meaning

abstract Transition is the process of changing from one state, form, activity, or place to another. It affects objects, events, and phenomena, and is affected by them as well. As Hericlitus noted when he said "No man shall step in the same river twice", transition is described by the inexorable flow of space and time. It is the river as a continuum in which all things exist in perpetual change. Individual objects, events, and phenomena act as temporal intervals in its current. As a function of visual communication, the transition from one interval to another is a process of bonding one form to another, one identity to another in a deliberate composition.

The transition from one element to another facilitates the identification of individual form and function. As such, transition is a bridge that connects separate elements in the formation of a system. It is the process of bridging separate forms and functions. It is a linking process that identifies a particular system and, when occurring sequentially, can function to give meaning to what we see.





Figures 1a and 1b
Assignment developed by Karen Moyer, Associate Professor of Design at Carnegie Mellon University.

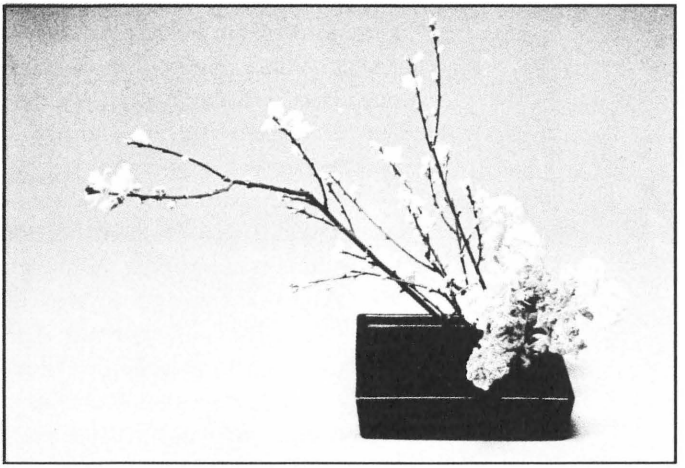


Figure 2a
Morinba flower arrangement. Courtesy of the Sogetsu School, Akasaka 7–Chome, Minato–Ku, Tokyo 107, Japan.

structure as the guiding principle Structure is defined as the formal configuration of elements, parts, or constituents comprising a particular arrangement. Levi-Strauss noted that nothing can be understood short of the basic demands of structure. Although he was speaking of primitive society, his observations have implications that go far beyond a localized set of relationships.

For the designer of a visual composition, the transition from one element to another is controlled by placement (a selective process), and position (the arrangement of individual elements in relation to each other and to the overall frame in which they occur). Placement and position identify a structural framework through which unity is perceived between a diversity of elements (figure 1a). Structure guides the transition from one element to another in the formation of a deliberate composition (figure 1b).

Transition is a continuous process. It is quantifiable only as a specific interval that joins or connects two or more features of an arrangement. As such, transition is recognizable only when operating between a finite (structural) set of relationships. It occurs in the space between individual intervals or positions.

For example, in flower arranging the movement of the eye spans the distance between individual elements to identify a deliberate composition (figure 2a). By joining or connecting individual elements, the space between them acts as a bridge that leads the eye from one point or position to another (figure 2b). It is a bridge that leads both ways, both to and from a particular place or position. The space between individual elements is the field in which transition occurs.

Bridging links separate functions and identify a particular system. Identification of a

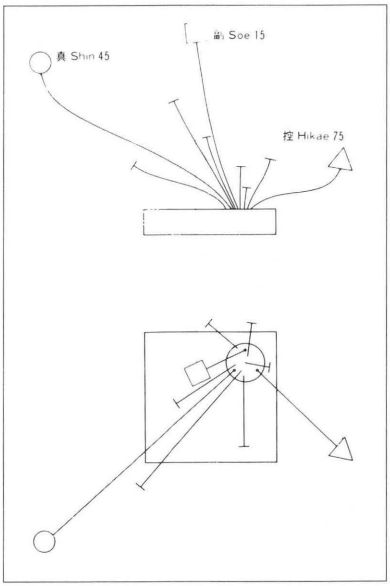


Figure 2b
Morimba flower arrangement. Courtesy of the Sogetsu School, Akasaka 7–Chome, Minato–Ku, Tokyo 107, Japan.

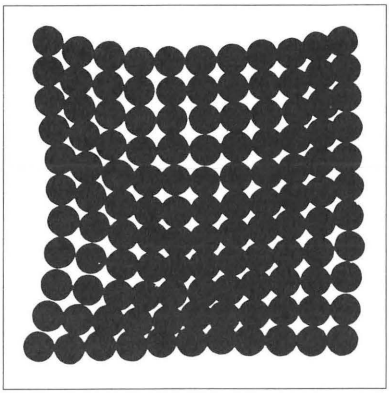


Figure 3
Assignment given by the author to beginning students to see how individual elements are related to each other within a system.

particular system depends on framing a set of relationships. Motion is an effect of transition that defines a set of relationships. It joins one element to another by measuring the distance between them. Measurement is a limitation placed upon structure that guides the movement of the eyes from one place or position to another within a composition.

Muybridge's photographic records show motion as a function of measurement as they document physical movement. They quantify distinct processes and act as frame-by-frame notation of interactive and inter-relative forces neccessary to move from one place or position to another through space.

We experience an intensification and release of visual and atmospheric forces when we walk from room to room in a house. This is made possible by the identification of structural channels through which movement can take place.

Structure acts to guide movement. Structural passageways lead the eye to compartments or subframes that, like rooms in a house, can be examined independently as well as together; transition is a linking process that occurs in the divisions between these compartments. To visualize structure is to compose units of space which form sets in the construction of a whole, this reveals part/whole relationships. With a subtle hand we are taken through a complex world where the familiar is rearranged to intrigue. We are engaged by the disparity between what we see and what we know.

Transition is only quantifiable as an interval of change from one state, point, place, or position to another. It connects various aspects of the space/time flow and enables us to examine a particular object, event, or phenomena

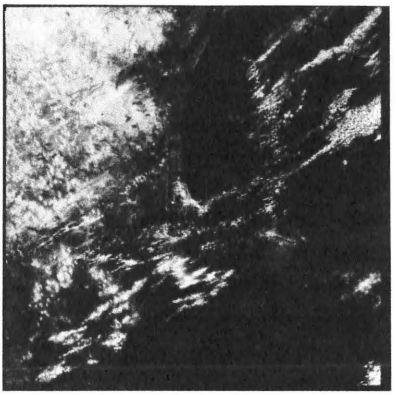


Figure 4a
10 x 6 meters.
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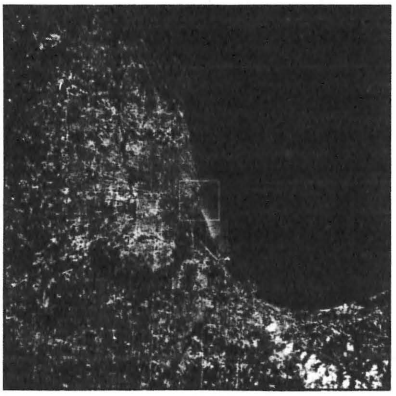

Figure 4b
10 x 5 meters.
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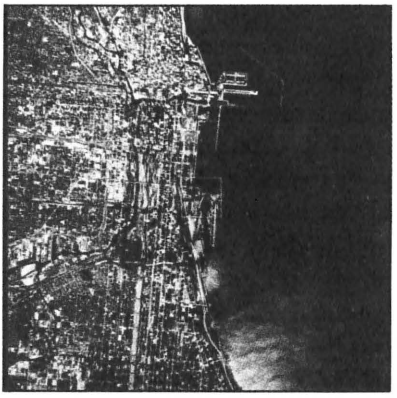

Figure 4c
10 x 4 meters
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according to where and when it occurs. Motion is defined as the physical process of transition that occurs as a change of place or position. There are two kinds of motion when we speak of physical movement. Convergent motion describes mutual approach to a given point. It is a focusing, or intensification, of forces. Divergent motion is the movement away from a particular point. It is a diffusion of forces that decreases tension.

Converging and diverging forces act simultaneously (figure 3). In the Pantheon, spatial forces converge at the opening of the dome before dissipation in the sky. This creates an interaction between interior and exterior spaces that implies a metaphysical transition between heaven and earth. Convergent and divergent motion can be directed by a structure to bridge form and belief.

We are always in the process of leaving behind something and moving towards another. Motion occurs as a change of state, form, activity, or place. It is an effect of transition that allows us to make distinctions between and among places, positions, and in a broader sense, intellectual functions as well. We move from one thought to another as if traveling from room to room in a house. Here, the advance and retreat of transition are one and the same. Simultaneous with space and time, transition occurs in the physical world as well as in the mind of the viewer.

framing Framing is the imposition of a structure that makes image areas distinct. It causes the eye to pause in its travels through space. For an audience, it initiates a transition from the random texture of the environment to a specific point, or points of focus. The eye skims across the visual texture of an uninterrupted pattern.

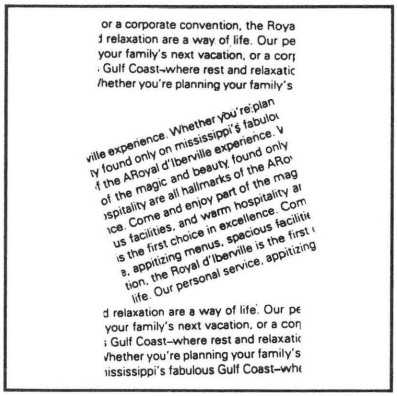


Figure 5
Typographic studies notebook to determine ways of visually dividing a text and linking the divisions according to structural devices. These studies are generic in the sense that they work from a purely visual standpoint without a meaningful text. See figures 6a and b for application of principles. From the author's notebook.

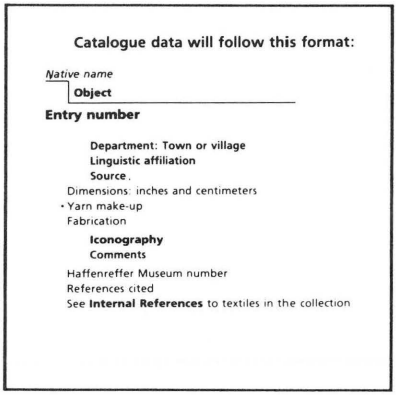


Figure 6a
Categories of information are made visually distinct by framing in a catalogue of Mexican, Central and South American textiles. Typography and design by the author. The transition from one level of information to another occurs through visual order (a column of text), and variation (framing as an interruption of a particular order). Costume as Communication. By Margot Blum Schevill. Courtesy of the Hafenreffer Museum of Anthropology, Brown University.

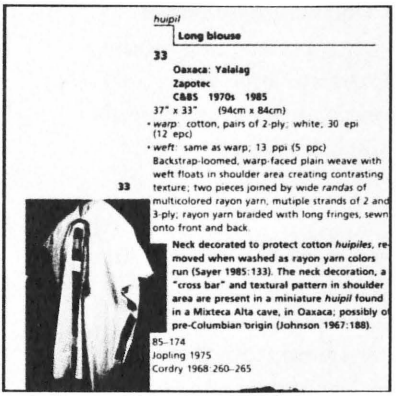


Figure 6b
Application to a real text with pictorial information linked to its description in a cross– referencing system comprised of interlocking frames and visual divisions being based on grouping information into categories based on pragmatic, syntactic and semantic function. Catalogue entry number 33, Costume as Communication. By Margot Blum Schevill. Courtesy of the Haer Museum of Anthropology, Brown University.

Motion is regulated by differentiation when the eye moves between individual elements at a speed which is controlled by the degree to which they contrast with each other.

A frame is a spatial or temporal interruption of a visual pattern that allows the eye to find and focus upon a specific set of relationships (figure 4a, figure 4b, figure 4c). A pattern consists of the perceptual texture in which individual elements exist in uniformity without formal variation in features. It is a neutral state in which distinction is lost, a state of free association in which transition is continuous and uninterrupted. Interrupting a pattern makes an image area distinct (figure 5). Moving or shifting of position within an arrangement interrupts the viewer's expectation - what is visually apparent changes (figure 6a and figure 6b). In essence, a frame is a structural formulation that temporarily interrupts the continuous flow of transition.

Framing defines the limits of a particular space. It is a limitation placed upon what we see that concentrates perception on a set of structural constraints. Movement through time and space act to join one frame to another. Spatial and temporal formulations divide the world, but also unite it (figure 7). Transition acts to unite intervals which exist in space and time. The space between two or more intervals in a continuity defines the field in which transition occurs. That which is, and that which lies between, are bonded by an inter-dependence so strong that it is impossible to think of one without the other. This difficult concept is beautifully expressed by an ancient Chinese aphorism, the "Eleventh Aphorism of Lao Tsu":

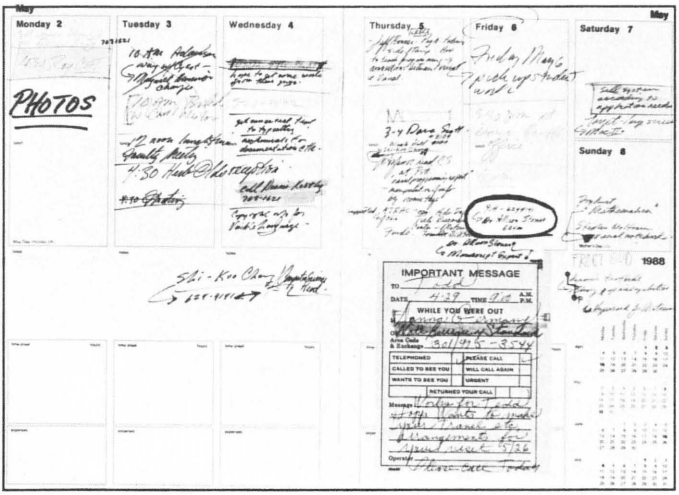


Figure 7
The transition from one day to another is marked by individual events. Notations in the author's calendar are artifacts of the process of transition through time.

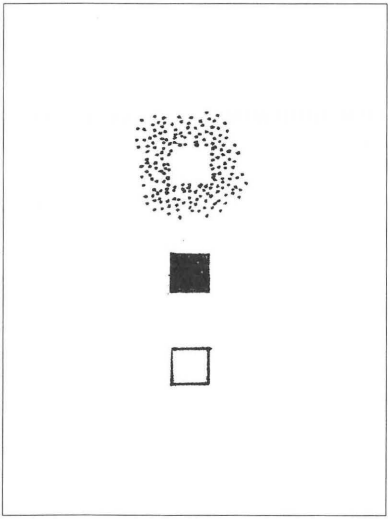


Figure 8a
That which surrounds defines.

Figure 8b
That which fills describes.

Figure 8c
The transitions from definition to description occurs at the edge of form, where it bonds with the surrounding space. Diagrams by the author.

Thirty spokes meet the hub,
but it is the emptiness between
them that makes the
essence of the wheel.
From clay pots are made,
but it is the emptiness inside
them that makes
the essence of the pot.
Walls with windows and doors
form the house,
but it is the emptiness between
them that forms the essence of
the house.

The principle: the material contains usefulness, the immaterial imparts essence.

In other words, that which fills describes (figure 8a), that which surrounds defines (figure. 8b). The transition from definition (a set of constraints, in other words, a frame) to description (an operation within a set of constraints) occurs at the physical limit or outer edge of a form (figure 8c). It is at the edge of a form where the surrounding space conforms to define the limits of its individual components. These components are linked to a particular frameby that which lies between and around them. Framing establishes a set of relationships (figure 9). This facilitates a transition from the eye's external perception, that which exists in the visual field, to an internal perception— within the mind and emotion.

Framing is the imposition of a structure for admitting or enclosing. It differentiates form and function. By framing an aspect of a communication we create a perceptual stage through which information is delivered to a specific audience. As actors reflect the emotional and intellectual content of characters in a play, framing can amplify image areas with greater or lesser degrees of intensity (figure 10 - slide

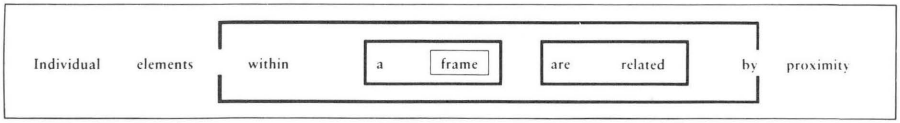


Figure 9
Diagram by the author.

Figure 10
Detail of a 12th century glossed–bible showing different levels of information made visually distinct. For a more detailed explanation of the processes affecting this detail, please see figure 15. *Oxford*, Bodleian Library, MS. Auct. E. inf. 6, fol. 86r (Bodleian shelfmark).

showing detail of manuscript page - for explanation of principles please see figure 15). Visual emphasis can be applied to information in a manner that formally expresses the relevance or importance of the contained message. This becomes a formal manipulation of the image area that signals the value of its content to an audience.

A golden frame around a painting by Rembrandt sends quite a different signal than the outline of a body produced in a police investigation. Both frames define a space. Both are defined by surrounding circumstances and linked by a frame to an audience. Framing creates a structural channel that leads the viewer to a message within. It facilitates the transition from surrounding circumstances to a specific set of relationships and identifies a self-contained field in which individual components are related to each other by a shared space.

Like water displaced by a stone, the formal constraints of structure are malleable in accommodating variations in form and function. As new elements are inserted into a design they alter its interpretation. If an element is taken out or omitted its meaning is subtracted, and the interpretation of the arrangement is modified accordingly. To insert, omit, substitute, or in any way change an element in a design is to create contrast with other elements near it. The disturbance of an arrangement acts to call attention to that which has been introduced, taken away, or changed.

contrast Contrast is the formal characteristic of framing that directs an audience to find and focus on a particular aspect of the visual field. It directs the eye to find particular points by creating apparent distinctions between them.

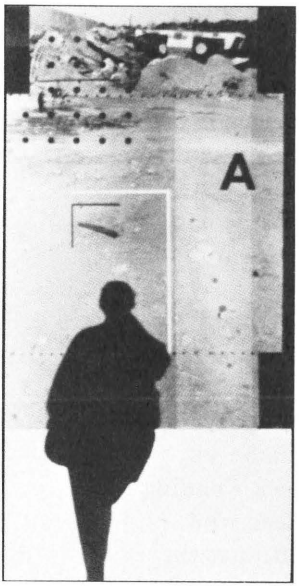


Figure 11
Diagram by the author.

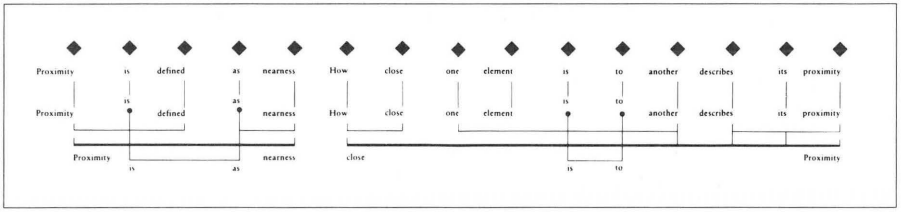


Figure 12
Proximity allows individual elements to act together in the formation of a body or systems.
Diagram by the author.

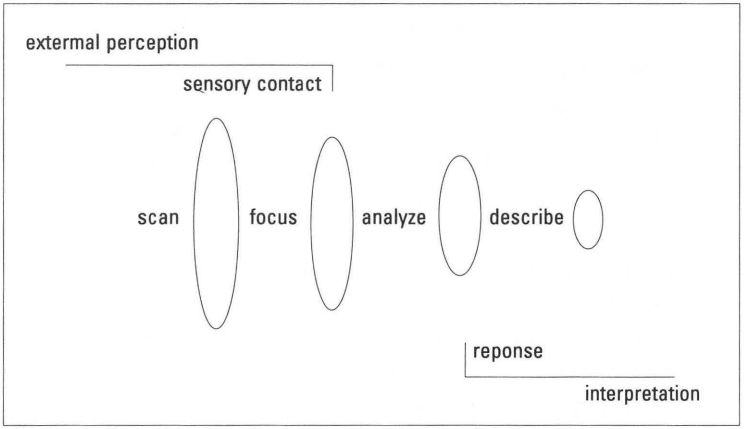


Figure 13
Diagram by the author.

To frame an aspect of a visual communication implies access to the visual field and begins a relationship with a viewer that goes beyond the borders of a contained image. It is a formal manipulation of an image area that gives emphasis to a particular aspect, or aspects, of a visual communication. To create contrast is to initiate a transition from one state, that of uniformity, to another state in which certain features become dominant, and others subordinant. To observe the process of transition is to receive a signal that something has changed.

Contrast is a formal emphasis that enables the eye to see one object, event, or phenomena as being different from another. Emphasis is an effect of framing that acts as a formal amplification and, like the actor on a stage, gives access to a particular point, or points of information (figure 11). To create access is to impose direction on the process of transition. It enables an audience to bridge the distance between themselves and a specific form or idea, and in doing so, facilitates the recognition of separate form and separate function.

Comparison links a diversity of elements according to similarities and differences. When giving form to a visual communication, we create relationships based on comparative judgments of relative value between individual elements comprising a composition. This identifies a complex operation in which individual functions coalesce around formal groupings and give meaning to what we see.

Often we remember something because of the degree to which it contrasts with other things to which it is compared. This disparity interrupts the pattern of expectation. If the disparity between what we see and what we know is too extreme it confounds or confuses,

and understanding is lost. Insertion, omission, and substitution change the meaning of a composition through the tension between familiarity and surprise.

order as a formal limitation How long does it take for the eye to recognize meaning? As long as it takes to bridge the distance between individual elements within an arrangement. Individual elements occurring within a frame are related by proximity. Proximity is defined as nearness, or closeness.

Proximity develops the expectation that what we see occurring in a particular frame forms a particular system. To create proximity is to interrupt a random pattern by grouping elements into sets (figure 12). It is a transition from a state of formal independence (patterning) to an inter-dependence (bridging) between individual elements as they appear and how they operate as a group. The space between individual elements unites them in the formation of an apparent system. Any system can be generative if it allows individual elements to act according to a particular order. Order functions to give meaning to what we see when it occurs as a sequence in which independent elements are progressively linked.

Sequence is a formal limitation placed upon the process of transition that causes it to occur and be interpreted in relation to what comes before and what follows in an arrangement. To generate meaning is to link components of an operation sequentially. The links describe the interactive (syntactic operation) and interrelative (semantic value) forces necessary to give meaning or articulate the frame in which they occur.

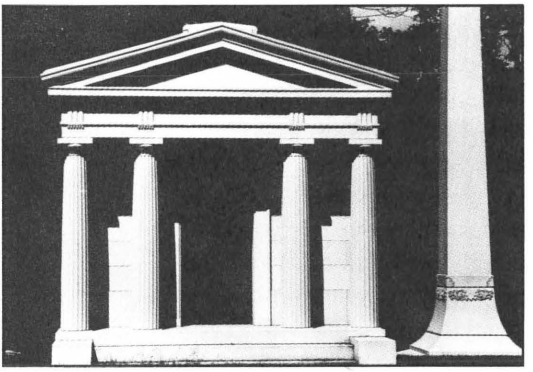
Within a visual arrangement, the transition from one element to another can be sequentially

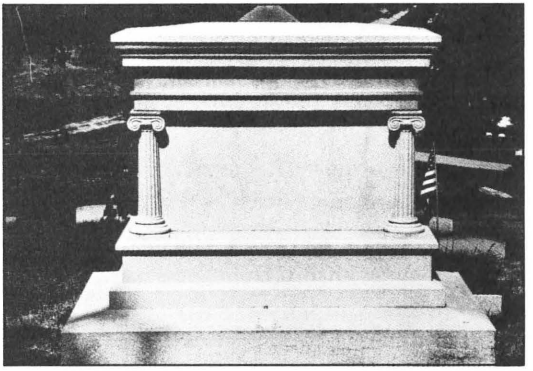
directed by their physical organization. Order is a structural limitation placed on individual features that facilitates the identification of a purposeful composition. Arnheim states: "order is the necessary condition for anything the human mind is to understand...". Transition takes on meaning when regulated by the organizing principles of sequential arrangement. An apparent sequence initiates the expectation for a system in which individual elements are grouped in order of the role that they play as meaningful parts of a composition.

Framing, contrast, and order are concepts that give focus to a communication. These concepts promote comparison and judgment in the process of structuring thought. They describe what is formally observed in terms of relative value within a particular order.

intellectual component The transition from what we see to what we know occurs through the process of linking phases of perception sequentially (figure 13, footnote number 1). As we move through the environment, we orient ourselves through a sequential progression according to judgments of near and far. We scan (position ourselves in relation to an overall framework and the objects, events, and phenomena within its borders) the visual field; we focus (define subframes, facilitated by their contrast with other things in their proximity) on particular points; we analyze (by comparing individual features to each other, and to impres-sions of prior contact with similar experiences); and we identify (by recognizing individual features composing a body or system). This enables us to describe what we see.

When we move through the environment we pass through the perceptual texture of space and time. Space and time are framed by





Figures 14 a–c
Photographs
by the author.

consciousness. This frame is the channel through which messages are sent and received. If something in particular catches our eye, we examine its components and analyze their relationship to each other. An analysis of what we see is based on what we know. Memory constitutes a kind of storeroom that is filled with objects, events, and phenomena with which we have prior experience. They exist as translations of an initial perception and are called into awareness from an inert state of unconscious storage. Awareness is a manifestation of the five senses in addition to the intellectual component of thought. The analytical mind allows us to map the transition from one thought to another. It is influenced by external and internal factors.

As social creatures we assign value to visual representations according to individual and collective experience; cultural beliefs form a mythology concerning structure. Across history we see a recurrence of certain forms that have come to express deeply imbedded cultural attitudes, beliefs and values. Classical architecture has become thematic in the shapes taken by other structures. We see this in funerary architecture where mausoleums are often derived from classical (figure 14a, figure 14b) and Egyptian form (figure 14c). Mythology, according to Joseph Campbell, is one way that we link our mortality to a higher purpose and express the value of our transition through life.

Recognition of extraordinary value initiates a transition from the expectation of a predictable everyday order between objects, events, and phenomena to something that is removed from ordinary experience and is of special value. For example, the garden at the

Palace of Versailles is in every sense developed to impress its audience. Radiating from a central core, it is symmetrical. The long promenade flanking a cruciform pool of water offers a visual channel leading up to the palace. The palace is placed on a hill; its position, from the garden, acting as a transition between earth and sky. From a distance, it is reflected with the sky in the pool. Fountains, centrally located in the garden, contain explosive sculptures of mythical animals and water spirits surrounded by reflections of the sky. These objects in this frame and order represent the power and place of Louis XV, the Sun King. They imply the participation of extraordinary forces in his movement through space and time. Formal position can both express ideas and emotions. They also express man's concept of himself relative to a perceived or imagined order.

The transition from ordinary to extraordinary meaning occurs in the way that we perceive structure. The imaginative mind, like that of the analytical, leads a receiver to bridge form and value. Idealized representation occurs through a visual organization and physical appearance that is special. Choices of materials, such as marble or gold, or placement, such as higher, lower, or centered within a frame, communicate something about what is seen as a component of a visual representation. We make choices all the time based on judgments of comparative value. An analysis of a visual representation is bound to be influenced by cultural beliefs and prejudices. For example, classical form is an idealized set of relationships based on preconceptions about proportions between the various components of an arrangement. These are removed from ordinary expectations - they accommodate no flaws or inconsistencies.

Across time certain beliefs, like dust on the shoes of a traveler, accumulate and appear again and again. These may be modified by present experience, but as with classical revival, they remain more or less intact and are generally unaffected by the continuous process of historical transition.

Concepts of "past" and "future" are called upon only in so far as they relate to the immediacy of the present moment. Present experience takes place as a thin veil of consiousness, pushed always ahead by time and space and memory (footnote number 2). These create the expectation that what we see will behave in a particular man- ner. Expectation is a pattern. Its interruption or disturbance makes an aspect or aspects of the visual field distinct. It can hold the attention of an audience for a greater or lesser period of time according to the degree to which it contrasts with other things that occur. The transition from uniform expectation to surprise can make important aspects of communication memorable.

hierarchy The imposition of hierarchical structure on order results in a formal arrangement of elements according to function and relative value (figure 15). Without hierarchy, order can occur as a uniform pattern which lacks the tensions necessary to direct the viewer to a specific point or points of focus. To create hierarchy is to initiate a transition from one state, where individual elements function at the same level of value (as in a visual pattern or passive intellectual state where the mind scans and is unencumberd by pauses for concentration and judgment), to another state, where individual elements are given greater or lesser importance.

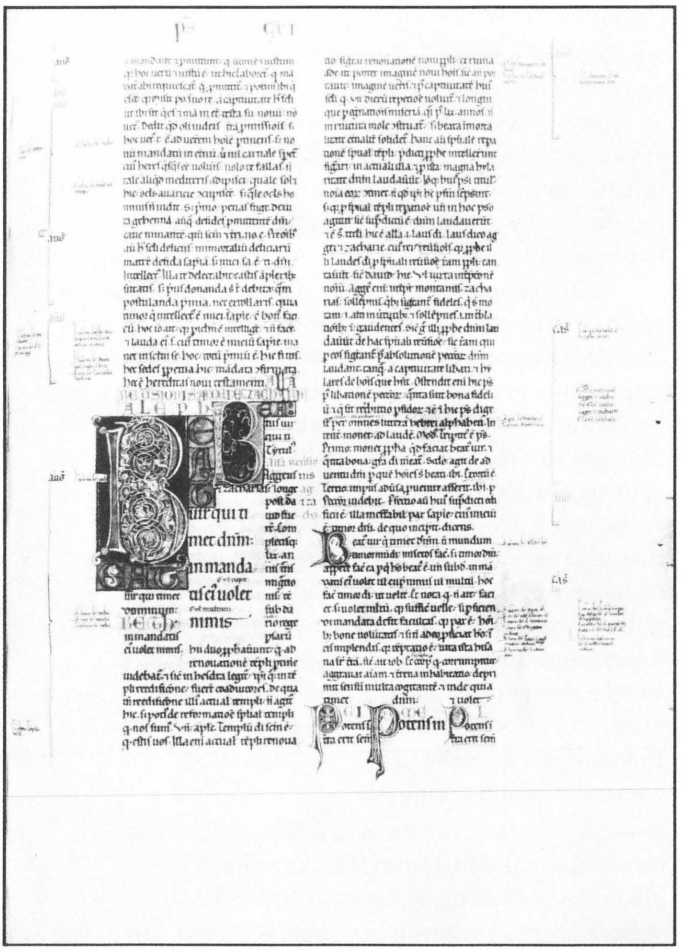


Figure 15
A page from a 12th century glossed–bible showing different levels of information made visually distinct by framing. Hierarchical divisions of the text are clarified by contrasting size (biblical text appears larger with alternate line-spacing, commentary is half the size of biblical text with single line spacing) and degree of ornamentation in illuminated letterforms. Brackets and color–coding are used to divide the gloss into individual comments. These are cross–referenced to specific points within the biblical text by a sophisticated marking system (calligraphic dots and dashes appearing by abbreviated names of commentators and cross–reference to their comments within the gloss) that enables the reader to make a transition between the subject and the written analysis appearing in the margins surrounding the biblical text. In addition, spaces were provided for readers to add their own insights and interpretations to the gloss.
Oxford, Bodleian Library, MA. Auct. E. inf. 6, fol. 86r.

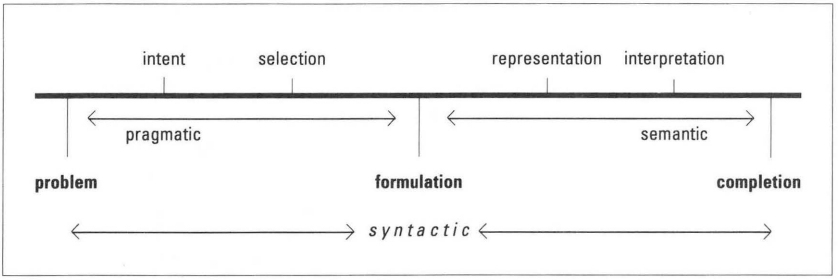


Figure 16
All communication occurs within the perceptual channel between a designer and his or her audience. The transition from intent, in other words, what a design is supposed to communicate, to representation, what we see as a message, is limited by the context in which communication occurs. All communication occurs as an overlap of mood representation. Diagram by the author.

Hierarchy is a condition which structures sequential operations between diverse components. It regulates the process of transition so that it occurs between functions which are arranged and linked in order of importance. Hierarchical arrangement sets the stage for the identification of meaning.

We identify, or name, a visual representation when it is shaped by a recognizable intent or purpose. The intent of a particular communication is a limitation placed upon the designer who must choose relevant visual elements to assemble in an accessible visual code (figure 16). A design is a set of constraints placed upon an audience, a visual frame to which they are directed and in which certain features are stressed by the designer according to their relative value.The designer acts as mediator between his client and a particular audience. A visual message links a particular audience to the formal representation of an idea composed by elements chosen according to the intent. The designer mediates between a problem and a solution; the design links communication and audience.The

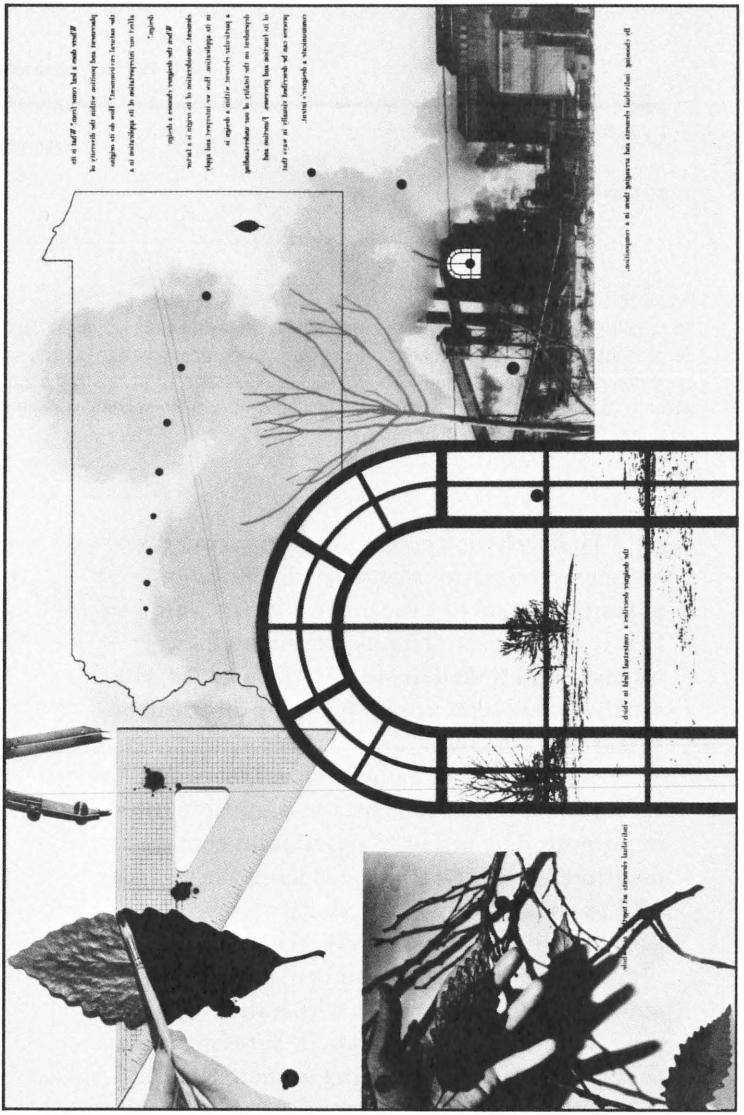


Figure 17
In an assignment developed by the author and given to his advanced graphic design students, they are asked to map the transition of a visual element (in this case, a leaf) from where it is found to the context of the studio where it undergoes a graphic translation (it is drawn and painted to become a stylized representation of the leaf). The intent is to show how time (as the channel in which the design process occurs) and process affect meaning in a transition from one context, where individual elements are diffused, to another, where they are united by design.
Student, Sarah Allen.

designer's understanding of the parameters of a particular problem, in other words, its intent, is a limitation on his or her selection of elements to use in a design. By choosing and placing independent elements in proximity to each other, we initiate a transition from independence to a semantic overlap through which a particular message is perceived. An object, event, or phenomena can be assigned meaning according to what occurs in proximity to it. That which precedes and that which follows has an effect on our interpretation of a visual event. As the eye moves from point to point in the visual field, it accumulates familiarity with what it has seen in its travels. Judgments are made on visual experience as the intellect adjusts to what is perceptually experienced. When a designer chooses an element to use within a design, our understanding of its origins influences our interpretation (figure 17). Visual information can accommodate different kinds of representation. Each element within a design brings with it some sense of its original meaning, otherwise its use in a graphic communication would be inaccessible to its audience. There is a vocabulary of forms and images just as there is a vocabulary of words.

The syntactic process of putting together visual elements generates meaning. Meaning exists in a context. We find equivalency between verbal and visual processes of simile and metaphor. For example, simile occurs when two or more unlike elements are compared (figure 18a, figure 18b), such as apples to oranges. By visually framing an apple and an orange we create a context in which meaning is shared by formal comparison. Simile occurs as a com parative relationship. It facilitates the transition from one interpretation of an object to another

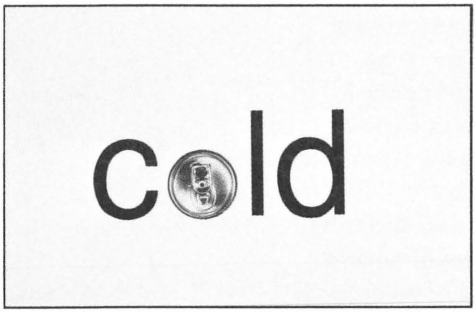


Figure 18 a
Student, Richard Mihm

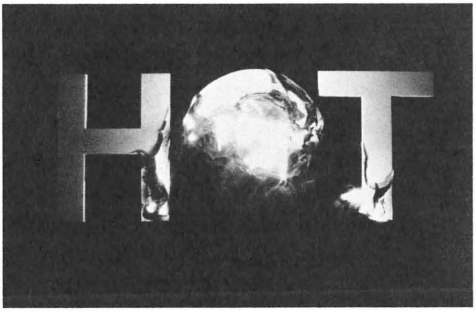


Figure 19 a
Student, Valery Peterle

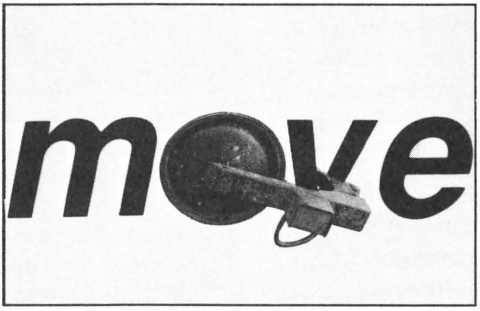


Figure 18c
Student, Jamie Apel

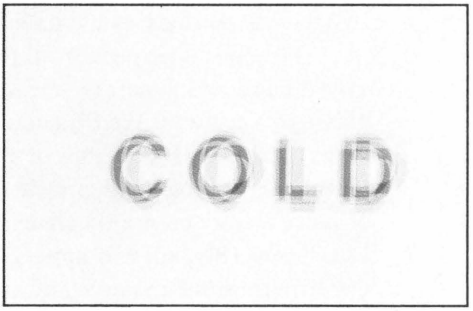


Figure 19c
Student, Susan Tribone

In an assignment given by the author, students are asked to develop a typographic interpretation of a word in such a way that what is seen communicates something about its meaning.

by comparison. Metaphor, however, is a formal overlap through which elements are described in each other's terms, in this case, apples as oranges. It establishes an associative relationship and marks the transition from description to invention (figure 19a and b, solutions resulting from the assignment described in figure 18a and b).

Only through the effect of familiarity do we span the distance between what we see and what we know. Prior experience allows us to apply meaning to the things that we see. We think in terms of similarities or differences and can analyze progressively as when dealing with technical data. What we observe as a visual communication assumes meaning as individual elements are linked to form sets, or subframes. These are united by the overall frame of the page.

The formal dimensions of a frame are a structural limitation that allow us to group elements according to their function. The organizing principles of hierarchy make a message accessible to an audience by providing formal clarity and semantic coherency between its components. A visual arrangement can be put together with individual elements that are sequentially linked. The change from one state, where individual elements are diffused, to another state, where they act as an apparent body or system, represents a transition from independence to unity.

Content is defined by more than a particular object serving an author or designer's intent. Rather, it is an overlapping of fields (figure 20, solution resulting from assignment described in figure 17). Intent is a translation of will that is formed by individual and collective experience. What we intend to com-

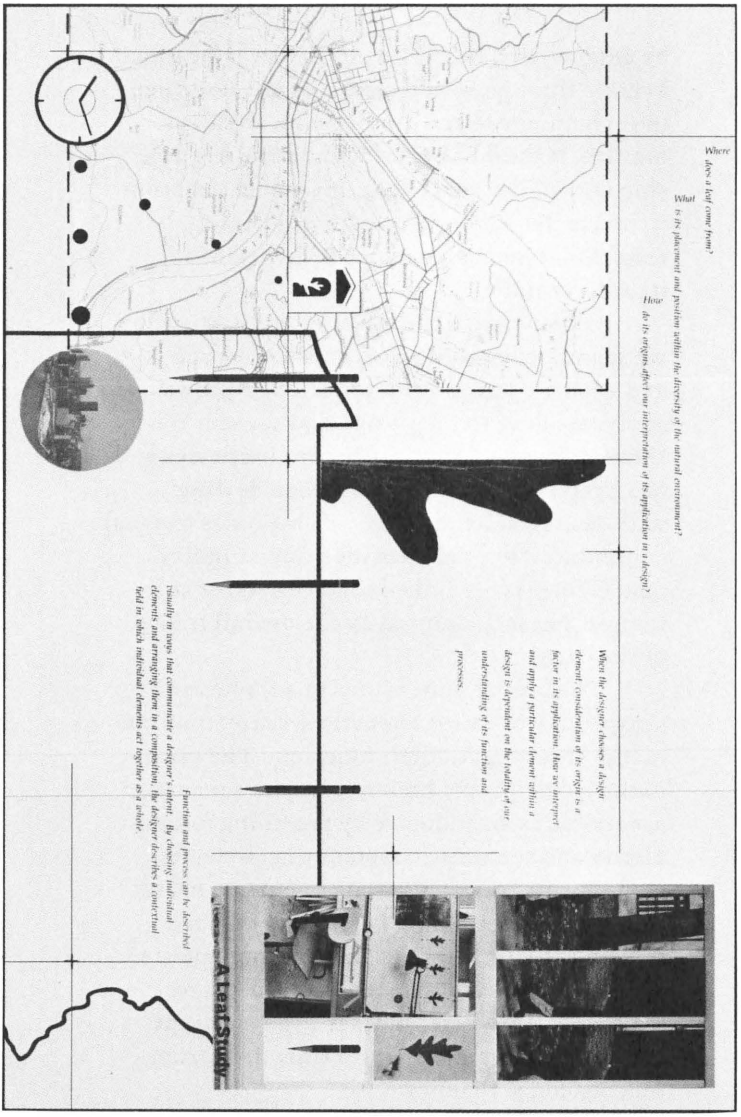


Figure 20 Another solution resulting from the work described in Figure 17. Student, Yin Yin Wong.

municate and how we do it is context dependent. For example, the designer is restrained by the audience's ability to understand the intended message. We perceive and give direction and meaning to the process of transition.

The mechanism of transition, its process of operation, gives it significance and meaning. It is the character and value of motion from one interval to another, one state to another, that enables us to to judge where we are in relation to where we have been. It allows us to link thoughts in the formation of an idea. Transition is a formal process that in observation and analysis allows us to identify separate aspects of reality. Separation and distinction allow individual functions to occupy center stage and then fade into the sideline. The transition from one element to another within an arrangement creates distinction by measuring the distance between them. It also joins separate elements in the formation of an arrangement. The duality of transition, its simultaneous properties of convergence and divergence make its meaning relative to that which precedes and that which follows within the configuration that guides it.

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Footnotes

1 At this point it is important to remind the reader that this paper is a meditation on the subject of visual transition. As such, the views expressed are my own and are derived from contemplation, not from rigorous testing provided by cognitive science.

2 The notion of awareness occurring as a thin veil of consciousness is dicussed by Alexandra David-Neel and Lama Yongden in their book, The Secret Oral Teachings in Tibetan Buddhist Sects. It is also discussed by Professor John R. Hayes, who teaches in the Psychology Department at Carnegie Mellon University.

Nicholas Kis: A Hungarian Punch-Cutter and Printer 1650-1702.

GYÖRGY HAIMAN

SAN FRANCISCO:

THE GREENWOOD

PRESS, 1983.

452 PAGES,

8 COLOR PLATES,

173 FIGURES,

97 FACSIMILE

REPRODUCTIONS,

BIBLIOGRAPHY

OF KIS' PRINTS,

9 ENCLOSURES

$60.00.

NICHOLAS KIS was known to his European contemporaries as the outstanding punchcutter of the day. In 1687, at the request of Archil, Sultan of Georgia, he cut the first typographic version of the Georgian language. It is believed that the Grand Duke of Florence, Cosimo III de Medici, ordered him 11,000 florins worth of matrices and invited him to settle in Florence. Kis, who was then active in Amsterdam, decided to go home to his native Transylvania instead.

This was a fatal decision for both himself and the course of typography; the name and the fame of the 'Phoenix of Transylvania' became extinct for more than a century. His material was scrapped by accident at the end of the 19th century.

Ever since, his compatriots have been digging archives and libraries in a search for their typographic hero, regardless of political, national and economic vicissitudes. In 1899, Lajos Dezsi published an important biography. In 1940, Imre Kner, a prominent Hungarian printer, publisher, and typographer, made the first of five successive republications of Nicholas Kis' *Mentsége* (Apology of Miklos M. Totfalusi Kis for his person, life and strange deeds, which he was forced to write in the year 1698). Given the stature of Kis and his work, an English translation of this Apology was long

overdue. In due course, in spite of the language barrier, anyone in Europe who had a stake in the history and the art of typography became more or less directly involved. The one decisive contribution to the re-identification and reassessment, in the western English speaking world, of Kis as an individual and the correct attribution of his type designs, was the Harry Carter and George Buday article: "The Origin of the Janson types: with a note on Nicholas Kis" in *Linotype Matrix*, March 1954, no. 18, p.7.; to be followed by "Nicholas Kis and the Janson Types" in *Gutenberg Jahrbuch* 1957, pp. 207-212. New types which were recut following historical type specimens and renamed after Janson (Leipzig, 1678) and Ehrhardt (Leipzig, 1720) were the occasion. In 1972 György Haiman's own contribution arrived. A labor of love and of a lifetime, it was also the sum of the cumulative work of successive scholars and, finally, of a devoted team of collaborators, assistants, bibliographers and students. The present volume is far more than an English translation: the additional chapters, appendices and indices amount to more than one hundred additional pages.

Nicholas Kis was born in Also-Misztofalu in 1650. At that time, politically, Transylvania managed a precarious independence between the warring Turks and Hapsburgs. To give some

measure of their spiritual independence, it will suffice to say that they eventually signed an alliance with the Turks to fight the Hapsburgs. Thus the calvinist Nicholas Kis would eventually print for the Unitarians as well as for the Jesuits, the arch-champions of the Counter-Reformation.

The Turks were ever present, even when not invading the territory. To translate and to print the Bible was therefore a top religious, social, and political priority in Transylvania. The New Testament was first translated and printed in Hungarian in 1541, the first complete Bible, in 1590. In 1650, at the time Kis was born, the widow of the Prince György Rakoczi I had invited no less a reformer than the illustrious Czech John Amos Comenius (1592-1670) to organize a school in the Hungarian town of Sárospatak. It is on this occasion and in this place that Comenius wrote and designed his revolutionary picture book *Delineato*, an outline of a model school along his pansophic ideal. It was the first picture book ever to introduce Western illiterate pupils to Latin through a study of things around them. Only eight pages were printed locally under the title *Lucidarium*, in 1653, because there were no woodcut artists available. The book as a whole was eventually printed in Nürnberg in 1658. By then Comenius had been gone from Hungary for two years. He had not been an immediate success. But the school he founded continued in Sárospatak until 1950.

By 1680, Chancellor Mihaky Teleki and Mihaly Tofeus, bishop of the Transylvanian Reformed Church, decided to have a new edition of the Bible printed and they thought no one could better supervise the work than Kis. Everybody, including Kis, was also aware of the fact

that typographical capacities were even more needed in Transylvania than preachers. So he was not content with preparing the text and correcting the proofs but had to become familiar with the printing process–which he did to such an extent that he ranks in a category with Garamont, Granjon and van den Keere, as a punchcutter and as a printer; but also in a category all of his own as a master of the intellectual as well as of the visual editing of the Bible or any other piece of printed matter. In other words, he was a unique combination of the talents of Plantin, Estienne, Granjon and Arias Montanus (as a theologian).

Belgium, as they called the Netherlands in Central Europe in those days, was in its Golden Age. France and Germany lay prostrate for two or three more generations as a result of the Thirty Years War. Anyone who had any ambition and talent had to go to Belgium in order to meet the best. In the case of Nicholas Kis, he would necessarily address himself to the Elseviers and to the Blaeu's as printers. Whoever the printer, Kis was not found wanting: by 1687 the new Hungarian Bible, two Psalters and a New Testament had been corrected and printed under his supervision. After this he stayed two more years in Amsterdam making a fortune as a punchcutter. This means that while he directed the translation and supervised the preparation of the copy to be printed, he became familiar with not only the printing process but with punchcutting as well. The amazing thing is that everything he printed in Amsterdam and later in Kolozsvár was printed with type of his own design, with punches he cut, and matrices he struck from which he cast his own letter supply. All this he learned

from a Dutch master (maybe Dirk Voskens?) who himself cut roman and script but no italic. Not only did Kis learn how to cut roman and italic but Hebrew as well, and Armenian, Georgian, German, Greek, Syriac, Samaritan, Coptic and music, too. (Incidentally, he is even known to have composed music.)

He had customers in Poland, Sweden, England, Germany and Italy, in addition to the Netherlands. In 1686, in Amsterdam, he printed a type-specimen displaying 37 series in all: 17 roman, 15 italic, 3 Hebrew, 1 Greek, 1 music. This made him self-supporting in all and every respect, i.e., he could achieve without any material assistance much more than what he himself always considered his main purpose: the printing of the Bible and the education of the people. That is why, in 1689, he returned to his beloved homeland instead of going to Florence. The rest of his life was tragic until the bitter end in 1702. Even so he managed to print and publish 110 titles in less than 12 years in spite of untrained personnel and invidious colleagues.

These are staggering achievements. Even if they could to some extent be explained by the invention and the use of the 'Contrapensum Contrapensorum" of which only the name is known, this and more to come would never come near to explaining such a unique combination of mechanical ingenuity and intellectual genius; of a total and simultaneous grasp of all the physical and metaphysical aspects of written communication. But this of course explains how and why his designs were an inspiration for the so-called Janson (Stempel, Linotype) and Ehrhardt (Monotype) typefaces in this century and as only the very greatest can be:

Garamont, Granjon, Caslon, Fournier et al. It also explains the sustained efforts of the best historians and bibliographers in his homeland first, and abroad at present.

György Haiman is an outstanding professional educator and typographer, printer, designer, and author in his native country and language. He is head of the Department of Typographics of the Hungarian Academy of Applied Arts. Right from the start he makes it clear that his subject is Nicholas Kis as a champion of public education and the spread of literacy. He fully discusses type design and typography as contributions to the treasury of forms and as a means for written communication in any language and format. He does this through a wealth of comparative material: typefaces and sketches, figures and detailed comment as well as a wealth of real size illustrations of texts of many descriptions: title pages, tables, preliminaries, contents, indices, etc. He also vividly demonstrates in what sense Kis' typefaces are the fullest expression of the typographic style of the period, a precursor of the 'modern' style and of the even more modern notion of a 'type family made up of variations on the shape such as, for example, the semi-bold, bold, condensed, etc. series of the roman letter'.

The text stood at the center of Kis' approach to typographic design. Professor Haiman, therefore, has very aptly included a separate and substantial section on the subject. The incunabula text was once the only test of professional skill. This is no longer so, of course, but the rules of spacing between words, leading between lines, of composition and register are and must remain the essence of clarity in typography. Professor Haiman makes the

important point that printing as a technique affected the visual editing of texts from the linear narrative to more functionally diversified forms of visual expression. Since separate elements could be assembled, changed, rearranged and displayed to bring about the desired forms, the typographer became familiar with the decorative forms of title-lines, line groups, openings and closing pages, etc., not to mention decorations, illustrations, vignettes, and ornaments. As a consequence, any typographic style since that time can be described as more or less text-centered, functional and/or decorative.

Just as he demonstrated the baroque element in the individual typefaces of Kis, so Professor Haiman goes on to isolate the baroque element in text composition generally, in Hungarian, and in Kis. And just as he stressed the difference between handwriting and typography so he also stresses a particular example in an Hungarian-Latin law book where Kis breaks all the typographic 'rules' and reaches back to a scholastic handwriting practice. Some marginal notes were as long as glosses so he quite sensibly let them run right into the text area and across the two columns in order not to disrupt the alignment of the following marginal note with its reference mark. He applies the same 'principle' to the Hungarian text which runs out longer than the Latin; so, whenever it helps, he lets the italic of the Hungarian column extend from the right under the roman of the Latin and run across the full length of the two columns. And why not? Why should a man who is a law unto himself blindly obey so-called typographic rules?

Rules make sense of course but only when they help make sense of the text. But then they

are no longer rules to be obeyed blindly, they are guiding principles which help the reader even more than the typographer. The division of words in the titles and in the text is accordingly discussed at length. It seems that Kis composed recommendations and typographic prefaces. Here again, as in the case of the Apology, any consciencious reader will feel that translations are long overdue. Imagine having typographic recommendations by Garamont, Granjon, and van den Keere! Now that Professor Haiman and his American publishers have introduced the Western world to the work of Nicholas Kis as one of the typographic all-timers in Western culture, now that we suspect that the man was as great as the typographer and know that he left an Apology, typographic prefaces and recommendations, we have a right to read them as well as his translators.

A book like this will reach a small readership of specialists. The latter should spread the news in other quarters not only to art historians and art teachers as a matter of course, but also to educators generally. This book can make them realize that in a daily changing scientific and materialistic environment, the one permanent and universal technology, as well as the one aesthetic of social and spiritual value, is written communication in all its diversity. It can help them realise that written communication is in fact the only universal means to acquire knowledge as well as to record and transmit conventional know-how.

Fernand Baudin is a book designer, writer and teacher in Belgium. He is a member of this journal's advisory board. His most recent book is *La Typographie au Tableau Noir*, Paris, 1984.

Please write. How to improve your hand-writing for business and pleasure in ten quick and easy lessons

Wolf Von Eckhardt. New York: Antheneum, 1988

THIS IS A MODEST BOOK (79 pages), with a specific purpose, to offer a method of learning to write legibly–thereby avoiding the present system or lack of system in the United States which, owing to the practise of poor handwriting leads through "unreadable records, botched orders, bookkeeping errors, undeliverable mail, etc. into losses running into millions". The history of the teaching of handwriting varies in different countries, but certainly in Britain we are going, partly for the same reasons, in the same direction. The handwriting on letters I receive, addresses on business letters, and the signatures on typed communications suggest this. We have not suffered from the systems of Spencer and Palmer, but we see similar deplorable results often directly related to the script taught to children.

The book is in two parts. The second part of this book is devoted to suggesting how anyone may, by following the lessons described, improve their writing. The lessons are simple, and should produce a reasonably legible hand. While this section is clear and reasonable, the first part of the book is concerned with the history of writing, and here the author is at sea. He quotes various English language authorities, but he is no historian and the historical statements which he makes are misleading; "writing

was first used on gravestones, monuments and temples"– but how do we know about what may have been written on perishable materials? or "the Roman Empire began to fall apart, and Christianity became the official religion in most of Europe, civilization was mainly preserved in the busy monastic scriptoria"– no mention of the invasions by barbarian peoples or "The first written versions of the Roman capital are Rustic and Square capitals"– what about Roman cursive? There are many more misleading and half-true statements.

Perhaps such statements do not matter much in an elementary book such as this, but what does matter is the statement that the alphabet we use today is based on the Roman capital "changes were essentially prompted by changes in the tool used, now that letters were written rather than incised in stone". The author does not however detail how such drastic changes as that between the Roman capital and half-uncial, or between the national hands, Beneventan, Visigothic, Merovingian, or Insular could have been introduced by the pen, since all scribes used a quill. In fact different forms of various letters had been evolved long before the apogee of the Roman Capital, (as on the Trajan column 114 A.D., executed seven centuries after the traditional date for

the foundation of Rome, 753 B.C.), particularly in cursive scripts, whence different forms and practise of four-line writing was introduced, for instance b, d, g, q, and also m. Students of writing would do better to concentrate on sixteenth century Italian italic, and the simplified version offered by Alfred Fairbank rather than to see origins in Capitals.

Von Eckhardt rightly blames the practise, common also in Britain, of starting a child on 'ball and stick' i.e., sans serif letters, and then telling them to add joins and do 'real writing'. The mistake is the same as that which assumes that the Roman capital is 'the basic letter'. There is no basic letter; letters have varied forms as a child recognizes. They are ideas, not ideal forms, and therefore vary with the instrument used.

And here I have one more comment to make. Von Eckhardt credits the pen with initiating alterations, but he has no use for the pen which is most commonly used today–the ballpoint. Why not? It is of course responsible for deplorable handwriting, when treated as an inferior italic pen. But why do we not start instead with its distinctive qualities? It runs over the paper with a new ease, so we need to learn combinations of letters, such as occur in our language, st, th, gh, etc. And we need to learn a new rhythm breaking up combinations, as well as joining them, so that legibility survives; since, as Von Eckhardt rightly remarks, legibility is the primary requirement of handwriting. We need a primer on how to write with the ballpoint and fibre-tipped pen.

Nicolette Gray is one of the founders of the Central Lettering Record at the Central School of Art and Design in London. She is the author of *Lettering as Drawing* and *The Paleography of Latin Inscriptions in Italy, 700-1000 A.D.*, among other books.

Author Biographies

Eugene R. Kintgen is a Professor of English and Associate Dean of the Graduate School at Indiana University. He has written extensively on style and the perception of poetry, and has recently edited *Perspectives on Literacy* with Barry Kroll and Mike Rose.

Richard Bradford is a lecturer in English at the University of Ulster at Coleraine, Northern Ireland. He has previously taught in the University of Wales and in Trinity College, Dublin, and has published articles on Milton, Poetic Form, and Eighteenth Century Poetry. His study of the novels of Kingsley Amis will be published in 1989.

Martha S. Lange is an Associate Professor of Visual Design at the School of Design, North Carolina State University), where she teaches history of graphic design, typography, and graphic design courses. Her design practice has been primarily in book design. Her research interests have included typographic history; graphic design in Italy, specifically vernacular design and design for political parties, and visual poetry. She has published articles in *ID*, *Print*, and *Design Issues*.

Szymon Bojko is an art critic and writer in Warsaw. Among his many publications are *New Graphic Design in Revolutionary Russia* (London: Lund Humphries, 1972), *Alexander Rodchenko: Photographic Works* (Cologne, 1977) and *Alexander Rodchenko* (London, 1980). He has prepared museum catalogues on the *Russian Avant-Garde*, *Lissitzky*, *Malevich*, and *Women Artists in Russian Avant-Garde*.

Krzysztof Lenk teaches at the Rhode Island School of Design where he has responsibility for courses in typography and information graphics. He earned his MFA from the Academy of Fine Arts in Cracow and was professor of graphic design at the School of Design in Lodz, Poland. His work as a designer and educator is specialized in editorial design and the visual presentation of information (diagrams, charts and graphs).

WILLIAM J. VANDE KOPPLE is Professor of English at Calvin College. He is currently pursuing interests in the theme–rheme division of sentences, in the nature of basic writers' composing processes, and in the nature of a viable grammar for discourse.

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KAREN GAROFALO holds a Masters of Science Degree in Design from the Institute of Design, Illinois Institute of Technology where she was awarded several departmental scholarships. She is currently working as a visual communication designer for a Chicago–based advertising agency.

TODD CAVALIER is an Assistant Professor of Graphic Design at Carnegie Mellon University. He has received a Carnegie Foundation Grant to study the evolution of visual structure in twelfth century page design at Oxford University. He is currently working on a project focusing on screen organization for computers which grows out of his work with medieval manuscripts and is supported by the United States Department of Commerce, and the National Bureau of Standards. In addition to practicing graphic design he is working on a solo exhibition, based on this paper, at Form Mediation International in Amsterdam.

HANA BARKER is currently completing her MFA in graphic design at the Rhode Island School of Design. She is interested in desktop publishing from a design and an educational point of view.

TYPOGRAPHICAL POINTS ON THE DESKTOP

Hana Barker, 19 Spruce Lane, Ithaca, NY 14850
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Hana Barker, pp. 343-367, © *Visible Language*
Rhode Island School of Design, Providence, RI 02906

ABSTRACT

Desktop publishing has been oversold by technicians and salesmen who do not understand the limitations of computer systems or the limitations of the user. Quality is as much an issue as cost, control, security, or speed. This paper focuses on the problem of poor design quality in the average desktop publication. The desktop publishing market is expected to grow at a rate of approximately 24% per year for the next several years[1]; its quality does not enjoy the same outlook unless strides are made in education and training. While desktop publishing presents many benefits to its users, the computer does not inherently bestow any aesthetic grace upon computer assisted productions.

Problems inherent in desktop publishing systems together with an historical perspective follows which explains why the average desktop publisher's background is no preparation for the complexity of publishing. Next, basic typographic principles are described in terms of their application to desktop publishings. Several strategies are subsequently explored which may be used to address the problem of quality in desktop publishing. Finally, conclusions are drawn based on these examples.

The articles in this issue have been designed to provide examples relative to the previous points. Throughout this issue of *Visible Language*, the first three pages of each article were designed to serve as an example of particular aspects of publishing, while the remaining pages were designed following a consistent format.

INTRODUCTION

Desktop publishing (DTP) is one of the newest branches of the personal computer revolution. Individuals and businesses are turning to the computer to improve their productivity, to gain greater security and control, and to improve their image. A statement from the premiere issue of the International Typeface Corporation's (ITC's) magazine *Desktop* says it well: "The advent of desktop publishing has provided a powerful tool for the creation of presentations which can increase productivity, boost sales, and improve corporate identity."[2] With a DTP system, the typical user can produce just about anything: newsletters, memos, reports, brochures, presentations, slides, overheads, charts, graphs, letters, etc. A glance through any magazine devoted to desktop publishing provides a convincing demonstration of potential applications.

Advertisements focus on the most appealing aspects of DTP, while in reality, many new system owners discover that the computer is not as easy to use as depicted by advertisements, and that it takes time to reach the skill level required to realize productivity gains. "What [some] fail to take into consideration is that while productivity makes time, creativity takes it"[3].

A sampling of desktop productions reveals what many users are now beginning to realize—that the computer offers many options, but does not offer any suggestions as to what is an effective design. The average desktop publication is poorly designed and visually unappeal-

ing; its computer origins are more noticeable than the message. The novice and experienced publisher alike need to be concerned with the design of their publications, because as standards (and expectations) rise, it is the not the computer production but the *design* that will make communications effective and successful.

Available clues indicate that desktop publishers are aware of mediocre quality, and the majority wish to improve their abilities. The existence of magazines directed towards desktop publishing is additional evidence that desktop publishers are eager for information which will help them provide better communications. For example, Adobe, (a type manufacturer), produces *Font & Function*, a magazine which, in addition to selling fonts, introduces basic typographic concepts. ITC also sells type, and has just released their premiere issue of *Desktop*. Both magazines feature basic typographic information, but fall short of satisfying their audience's needs since too much information is presented at once, out of context. By reading these and other magazines, desktop publishers may learn to identify 'bad' situations. However, the concepts are not distilled to the point where desktop publishers can apply them to difficult situations, making appropriate adjustments.

To understand why desktop publishers run into problems, and why certain effects occur, it is helpful to consider the origins of the office system and the resulting contributions they have made. These considerations provide a basis for understanding the problem, as most desktop publishers do not have design experience or training. They come from business rather than design backgrounds, and their experience with production *before* the introduction of computers is from a business context, not from a design context.

HISTORICAL PERSPECTIVE

A hundred years ago, offices communicated by producing correspondence on the typewriter. Fifteen years ago, offices were using wordprocessors, photocopiers and dictaphones. The skills required to communicate well in these systems were simple in comparison with those required for successful communication with computer–based systems. Offices today use computers in conjunction with telephones, computer mail, fax machines, photocopiers, and overnight mail services—all for successful communication. These tasks are suited to the computer's capabilities in desktop publishing, but desktop publishers require assistance and education to make effective decisions when facing the flexibility the computer offers in the preparation of a document.

An examination of figures 1 through 3 will show how the formal habits developed over time have influenced the appearance of desktop productions. It also demonstrates how desktop publishing programs do not share the same limitations as typewriters and wordprocessors. These programs demand that many decisions be made where previously none were required.

TYPEWRITER Communication in the office went through the transition from handwritten correspondence to typewriter production in the late 1800s. The advantages the typewriter offered outweighed the initial drawbacks, and it was enthusiastically incorporated into offices. Typing increased speed and productivity, and was more consistent than handwriting. The first three pages of Kintgen's article, *Literacy Literacy,* are an example of a typewritten document. The article pages are reproduced here as figures 1a–c (see page 349 for figures). While the forms of typewritten documents were inspired by the formal characteristics of handwritten correspondence, they were also limited by the physical constraints of the machine.

Common features of typed matter are:
Headings are centered,
(which for large amounts of text is hard to read. The
eyes fluctuate back and forth
on both ends of the lines.)
The first line of each paragraph is indented
five spaces, and the entire page is filled with typing.

WORDPROCESSOR Offices made the next transition when wordprocessors were introduced during the '70s. A wordprocessor consists of a keyboard, screen, and the memory/program unit. Although limited functionally, wordprocessors brought the computer into the office for the first time along with its related concepts. These concepts changed the way offices viewed themselves in terms of print production, as they were now able to produce form letters and other documents internally. This ability changed the working habits and expectations in the office.

"What You See Is What You Get" (WYSIWYG, pronounced whiz–ee–whig) is an idea that provided a major breakthrough in small scale publishing, forming the basis for desktop publishing today. A wordprocessor's screen shows an entire typed page, permitting the previewing of text before printing. This means that a relatively unskilled person can use the machine because elements are arranged by eye. Previously, trained secretaries judged letter text based on experience and started the first line of type accordingly, following traditional formats. WYSIWYG allows someone without experience to type text and then arrange it as desired on the page.

Wordprocessors have a large amount of data stored on floppy disk. This translates into a reduction in the amount of paper an office is required to store. With electronic memory, once text is entered into the machine, it can be edited endlessly without retyping the

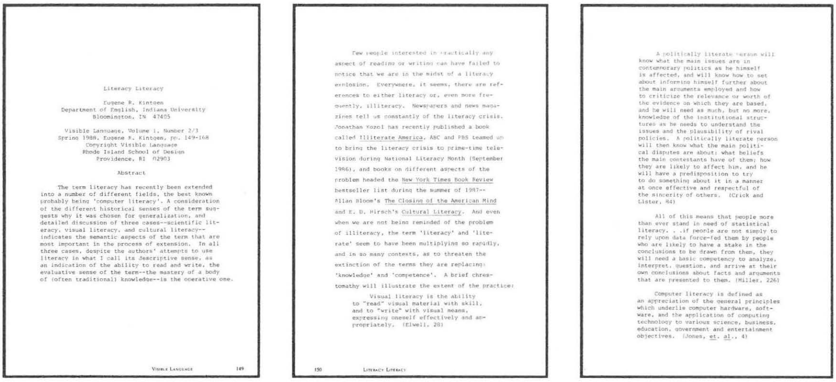
entire text. Using a wordprocessor to create correspondence, text can be entered quickly, printed out, and subsequent changes made. Wordprocessing eliminated retyping letters with errors, but numerous redrafts resulted in a longer process.

The wordprocessor also introduced the negative peculiarities of the computer, such as its tendency to 'crash' (lock up and shut down) when overloaded or when static electricity and humidity were high. Offices were then forced to cope with the situation created when the computer shut down, trapping all documents inside.

The visual format of wordprocessed documents changed very little from the typewriter even though the production methods changed significantly. The wordprocessor features functions such as: automatic bold (the machine double-strikes slightly off-register), automatic centering, and automatic underlining. The first feature is new, while the last two features listed save time.

The first three pages of Bradford's article (reproduced in figure 2a–c) are an example of a wordprocessed document which follows a standard format. It is similar to figures 1a–c; the headings are centered and the paragraphs have been indented 5 spaces. This example also demonstrates the ability of the wordprocessor to justify text.

> Justification means that all of the lines of text end at the same point along the right-hand side of the page, making the text appear as a uniform block. The machine achieves this by holding an entire line in memory, and then when the maximum number of characters for that line has been reached, it figures out how much space is necessary between the words to make the entire line take up the given amount of space. This results in uneven spaces between words, as demonstrated by the preceding eleven lines.



Literacy Literacy

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Abstract

The term literacy has recently been extended into a number of different fields, the best known probably being 'computer literacy'. A consideration of the different historical senses of the term suggests why it was chosen for generalization, and detailed discussion of three cases--scientific literacy, visual literacy, and cultural literacy--indicates the semantic aspects of the term that are most important in the process of extension. In all three cases, despite the authors' attempts to use literacy in what I call its descriptive sense, as an indication of the ability to read and write, the evaluative sense of the term--the mastery of a body of (often traditional) knowledge--is the operative one.

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Few people interested in practically any aspect of reading or writing can have failed to notice that we are in the midst of a literacy explosion. Everywhere, it seems, there are references to either literacy or, even more frequently, illiteracy. Newspapers and news magazines tell us constantly of the literacy crisis. Jonathan Kozol has recently published a book called Illiterate America, ABC and PBS teamed up to bring the literacy crisis to prime-time television during National Literacy Month (September 1986), and books on different aspects of the problem headed the New York Times Book Review bestseller list during the summer of 1987--Allan Bloom's The Closing of the American Mind and E. D. Hirsch's Cultural Literacy. And even when we are not being reminded of the problem of illiteracy, the term 'literacy' and 'literate' seem to have been multiplying so rapidly, and in so many contexts, as to threaten the extinction of the terms they are replacing: 'knowledge' and 'competence'. A brief chrestomathy will illustrate the extent of the practice:

Visual literacy is the ability to "read" visual material with skill, and to "write" with visual means, expressing oneself effectively and appropriately. (Elwell, 28)

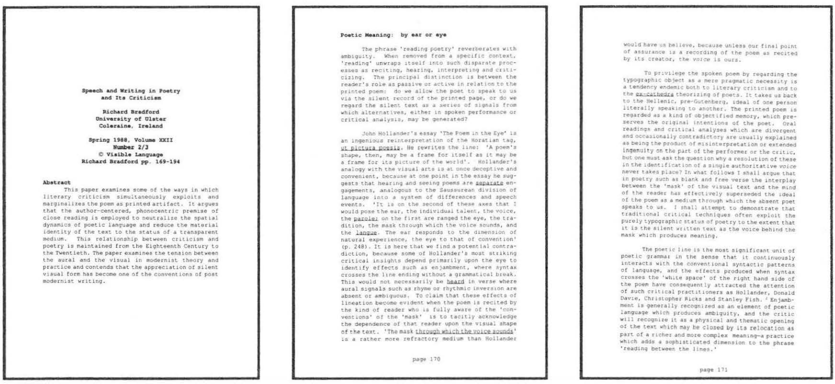
150 Literacy Literacy

A politically literate person will know what the main issues are in contemporary politics as he himself is affected, and will know how to set about informing himself further about the main arguments employed and how to criticize the relevance or worth of the evidence on which they are based, and he will need as much, but no more, knowledge of the institutional structures as he needs to understand the issues and the plausibility of rival policies. A politically literate person will then know what the main political disputes are about: what beliefs the main contestants have of them; how they are likely to affect him, and he will have a predisposition to try to do something about it in a manner at once effective and respectful of the sincerity of others. (Crick and Lister, 84)

All of this means that people more than ever stand in need of statistical literacy. . .if people are not simply to rely upon data force-fed them by people who are likely to have a stake in the conclusions to be drawn from them, they will need a basic competency to analyze, interpret, question, and arrive at their own conclusions about facts and arguments that are presented to them. (Miller, 226)

Computer literacy is defined as an appreciation of the general principles which underlie computer hardware, software, and the application of computing technology to various science, business, education, government and entertainment objectives. (Jones, et. al., 4)

Figure 1a–c



Speech and Writing in Poetry and Its Criticism

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Richard Bradford pp. 169-194

Abstract

This paper examines some of the ways in which literary criticism simultaneously exploits and marginalizes the poem as printed artifact. It argues that the author-centered, phonocentric premise of close reading is employed to neutralize the spatial dynamics of poetic language and reduce the material identity of the text to the status of a transparent medium. This relationship between criticism and poetry is maintained from the Eighteenth Century to the Twentieth. The paper examines the tension between the aural and the visual in modernist theory and practice and contends that the appreciation of silent visual form has become one of the conventions of post modernist writing.

Poetic Meaning: by ear or eye

The phrase 'reading poetry' reverberates with ambiguity. When removed from a specific context, 'reading' unwraps itself into such disparate processes as reciting, hearing, interpreting and criticizing. The principal distinction is between the reader's role as passive or active in relation to the printed poem: do we allow the poet to speak to us via the silent record of the printed page, or do we regard the silent text as a series of signals from which alternatives, either in spoken performance or critical analysis, may be generated?

John Hollander's essay 'The Poem in the Eye' is an ingenious reinterpretation of the Horatian tag, ut pictura poesis. He rewrites the line: 'A poem's shape, then, may be a frame for itself as it may be a frame for its picture of the world'. Hollander's analogy with the visual arts is at once deceptive and convenient, because at one point in the essay he suggests that hearing and seeing poems are separate engagements, analogous to the Saussurean division of language into a system of differences and speech events. 'It is on the second of these axes that I would pose the ear, the individual talent, the voice, the parole; on the first are ranged the eye, the tradition, the mask through which the voice sounds, and the langue. The ear responds to the dimension of natural experience, the eye to that of convention' (p. 248). It is here that we find a potential contradiction, because some of Hollander's most striking critical insights depend primarily upon the eye to identify effects such as enjambment, where syntax crosses the line ending without a grammatical break. This would not necessarily be heard in verse where aural signals such as rhyme or rhythmic inversion are absent or ambiguous. To claim that these effects of lineation become evident when the poem is recited by the kind of reader who is fully aware of the 'conventions' of the 'mask' is to tacitly acknowledge the dependence of that reader upon the visual shape of the text. 'The mask through which the voice sounds' is a rather more refractory medium than Hollander

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would have us believe, because unless our final point of assurance is a recording of the poem as recited by its creator, the *voice* is ours.

To privilege the spoken poem by regarding the typographic object as a mere pragmatic necessity is a tendency endemic both to literary criticism and to the ex-cathedra theorizing of poets. It takes us back to the Hellenic, pre-Gutenberg, ideal of one person literally speaking to another. The printed poem is regarded as a kind of objectified memory, which preserves the original intentions of the poet. Oral readings and critical analyses which are divergent and occasionally contradictory are usually explained as being the product of misinterpretation or extended ingenuity on the part of the performer or the critic, but one must ask the question why a resolution of these in the identification of a single authoritative *voice* never takes place? In what follows I shall argue that in poetry such as blank and free verse the interplay between the 'mask' of the visual text and the mind of the reader has effectively superseded the ideal of the poem as a medium through which the absent poet speaks to us. I shall attempt to demonstrate that traditional critical techniques often exploit the purely typographic status of poetry to the extent that it is the silent written text as the voice behind the mask which produces meaning.

The poetic line is the most significant unit of poetic grammar in the sense that it continuously interacts with the conventional syntactic patterns of language, and the effects produced when syntax crosses the 'white space' of the right hand side of the poem have consequently attracted the attention of such critical practitioners as Hollander, Donald Davie, Christopher Ricks and Stanley Fish.[1] Enjambment is generally recognized as an element of poetic language which produces ambiguity, and the critic will recognize it as a physical and thematic opening of the text which may be closed by its relocation as part of a richer and more complex meaning–a practice which adds a sophisticated dimension to the phrase 'reading between the lines.'

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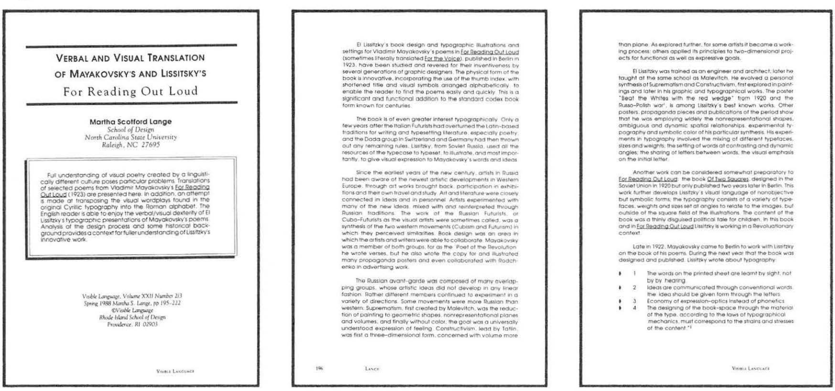
Figure 2a–c



VERBAL AND VISUAL TRANSLATION
OF MAYAKOVSKY'S AND LISSITSKY'S
For Reading Out Loud

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Full understanding of visual poetry created by a linguistically different culture poses particular problems. Translations of selected poems from Vladimir Mayakovsky's For Reading Out Loud (1923) are presented here. In addition, an attempt is made at transposing the visual wordplays found in the original Cyrillic typography into the Roman alphabet. The English reader is able to enjoy the verbal/visual dexterity of El Lissitzky's typographic presentations of Mayakovsky's poems. Analysis of the design process and some historical background provides a context for fuller understanding of Lissitzky's innovative work.

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El Lissitzky's book design and typographic illustrations and settings for Vladimir Mayakovsky's poems in For Reading Out Loud (sometimes literally translated For the Voice), published in Berlin in 1923, have been studied and revered for their inventiveness by several generations of graphic designers. The physical form of the book is innovative, incorporating the use of the thumb index, with shortened title and visual symbols arranged alphabetically to enable the reader to find the poems easily and quickly. This is a significant and functional addition to the standard codex book form known for centuries.

The book is of even greater interest typographically. Only a few years after the Italian Futurists had overturned the Latin-based traditions for writing and typesetting literature, especially poetry, and the Dada group in Switzerland and Germany had then thrown out any remaining rules, Lissitzky, from Soviet Russia, used all the resources of the typecase to typeset, to illustrate, and most importantly, to give visual expression to Mayakovsky's words and ideas.

Since the earliest years of the new century, artists in Russia had been aware of the newest artistic developments in Western Europe, through art works brought back, participation in exhibitions and their own travel and study. Art and literature were closely connected in ideas and in personnel. Artists experimented with many of the new ideas, mixed with and reinterpreted through Russian traditions. The work of the Russian Futurists, or Cubo-Futurists as the visual artists were sometimes called, was a synthesis of the two western movements (Cubism and Futurism) in which they perceived similarities. Book design was an area in which the artists and writers were able to collaborate. Mayakovsky was a member of both groups, for as the Poet of the Revolution he wrote verses, but he also wrote the copy for and illustrated many propaganda posters and even collaborated with Rodchenko in advertising work.

The Russian avant-garde was composed of many overlapping groups, whose artistic ideas did not develop in any linear fashion. Rather different members continued to experiment in a variety of directions. Some movements were more Russian than western: Suprematism, first created by Malevitch, was the reduction of painting to geometric shapes, nonrepresentational planes and volumes, and finally without color; the goal was a universally understood expression of feeling. Constructivism, lead by Tatlin, was first a three-dimensional form, concerned with volume more

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than plane. As explored further, for some artists it became a working process; others applied its principles to two-dimensional projects for functional as well as expressive goals.

El Lissitzky was trained as an engineer and architect; later he taught at the same school as Malevitch. He evolved a personal synthesis of Suprematism and Constructivism, first explored in paintings and later in his graphic and typographical works. The poster "Beat the Whites with the red wedge" from 1920 and the Russo-Polish war', is among Lissitzky's best known works. Other posters, propaganda pieces and publications of the period show that he was employing widely the nonrepresentational shapes, ambiguous and dynamic spatial relationships, experimental typography and symbolic color of his particular synthesis. His experiments in typography involved the mixing of different typefaces, sizes and weights; the setting of words at contrasting and dynamic angles; the sharing of letters between words, the visual emphasis on the initial letter.

Another work can be considered somewhat preparatory to For Reading Out Loud: the book Of Two Squares, designed in the Soviet Union in 1920 but only published two years later in Berlin. This work further develops Lissitzky's visual language of nonobjective but symbolic forms; the typography consists of a variety of typefaces, weights and sizes set at angles to relate to the images, but outside of the square field of the illustrations. The content of the book was a thinly disguised political tale for children. In this book and in For Reading Out Loud Lissitzky is working in a Revolutionary context.

Late in 1922, Mayakovsky came to Berlin to work with Lissitzky on the book of his poems. During the next year that the book was designed and published. Lissitzky wrote about typography:

- 1 The words on the printed sheet are learnt by sight, not by by hearing.
- 2 Ideas are communicated through conventional words, the idea should be given form through the letters.
- 3 Economy of expression–optics instead of phonetics.
- 4 The designing of the book-space through the material of the type, according to the laws of typographical mechanics, must correspond to the strains and stresses of the content."[1]

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Figure 3a–c

Figures are numbered corresponding to the number of the article being referenced; (Kintgen = 1; Bradford = 2; Lange = 3; Bojko/Lenk = 4; Vande Kopple/Shoemaker = 5; Garofalo = 6; Cavalier = 7; Book Reviews = 8). Letters following the numbers refer to specific examples. For instance, "figure 1" refers to the group of figures 1a through 1e; whereas "figure 1c" refers to that specific figure.

Notice how justification (figure 2a-c) differs from the right–hand edge in figure 1a–c. The margin in figure 1 and in all paragraphs (except for the preceding one) is called "ragged", as each line varies slightly in length.

DESKTOP The designs from which figures 1 and 2 are based are limited by formal constraints. As earlier styles and production characteristics necessarily define the initial efforts on the computer, typewritten and wordprocessed documents have influenced the appearance of the average desktop publication.

The first three pages of Lange's article, reproduced here in figures 3a–c, is an example of a desktop publication. Desktop publishing became possible in 1984, when personal computers were combined with layout software and printers. This article contains many elements not seen previously, such as different typefaces , styles, and sizes, together on one page. These effects are simple to achieve using the computer. Some of the formal elements have carried over from the typewriter—much of the information is centered, and the body text is justified. This example represents a style based on typewriter and wordprocessor formats augmented by the new effects the computer is capable of producing. The result is visually confusing and prevents the contents of the article from reaching the reader clearly.

The progression of articles shows how the habits formed initially with handwriting and the typewriter transferred without significant change to the wordprocessor, but did not transfer well to the computer. The computer's increased flexibility requires the user to make many new choices—choices he is not experienced enough to make successfully.

DETAILS

There are many small decisions, other than those dictating conventional styles, which together determine the final appearance and effectiveness of a document. Figures 1–3 provide examples of the elements that combine to produce the results seen above. These same elements are the building blocks for better quality publications. This secondary examination of figures 1–3 reiterates the point that the computer requires skilled decision making.

HORIZONTAL SPACING Letter and word spacing affect the readability of the text. Poorly spaced letters and words are difficult to read and may produce eyestrain. The following examples show how the typewriter and wordprocessor offer a very limited selection of letter and word spacings, while the computer has many options. The computer's flexibility leaves decision-making regarding letter and word spacing the user's responsibility. Although default settings are provided, they are not necessarily the best choices for all situations. ('Default settings' are like cake mix. They provide generic settings on the computer which may be manually overidden.)

Character spacing on the typewriter consists of equal units. The space each letter fits into and the space made by the space bar are exactly the same width, regardless of each letter's width. Figure 1d is an enlarged example of several lines from a typewriter. The boxes show the identical space around each character. The typewriter's even spacing is not ideal—ideally, spacing should respond to the width of each character.

Figure 6 is an example of the letter and word spacing produced by the computer. Characters are arranged individually, according to their width and relationship to the surrounding letters. Unlike typewriters or word-

processors, the computer has settings which can adjust the word and letter spacing with infinite precision. Figures 3d and e are examples of poor spacing. In figure 3d, the letters are too far apart. Figure 3e has the opposite problem; words and letters are too close together. Both of these examples are difficult to read and they highlight the range of the computer's settings.

Because of the wide variety of typefaces available on the computer, the given default settings are not appropriate for every face. However, the parameters are flexible enough to fine tune any situation for ease in reading. For example, figure 3f is an enlarged version of the text from article 3. The letters are very close together and difficult to read. The parameters for figure 3f are the same as the settings for the base text. While these parameters are fine for the base text, they are inappropriate for this particular use.

TYPESIZE Another option unique to the computer is the choice of typesize. The typewriter and the word-processor offer two kinds of type,

for example, this is Courier.

This is an example of Prestige Elite.

In contrast, the computer has the ability to create type in virtually any size. The typographical unit of measurement is the point, and all typesizes are referred to in terms of points. For example, this text is composed of 9–point type.

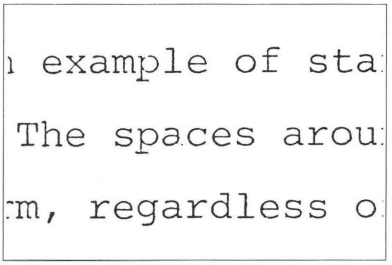

Figure 1d.

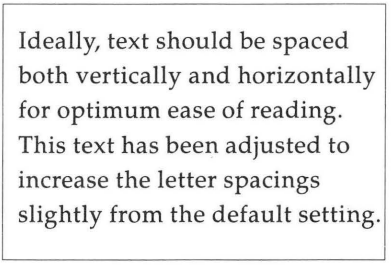

Figure 6.

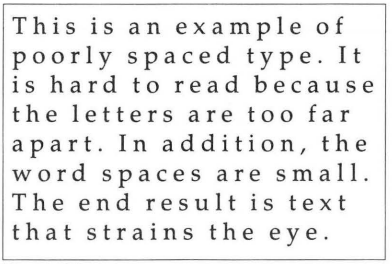

Figure 3d.

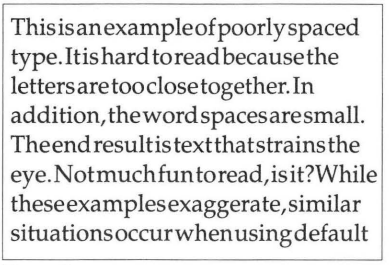

Figure 3e.

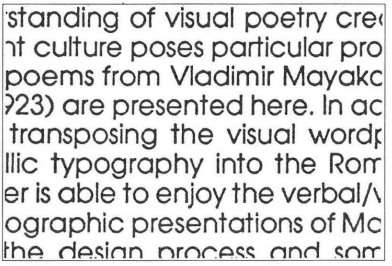

Figure 3f.

This sentence is an example of 14–point type.

And this is an example of

36-point type.

The smallest type available on the Macintosh is 4 points, which looks like this. There is no upper or lower limit to the size of type available, as laserprinters can enlarge and reduce type.

Because the computer is capable of creating any point size of type, it is often difficult to decide which size is appropriate for a particular use. When there is not enough variation between presented point sizes, the difference is indistinguishable to the reader. Figure 3a shows that mixing different sizes of type is ineffective unless the sizes differ significantly.

VERTICAL SPACING Vertical spacing, known as *leading* in typographical terms, also plays a role in the readability and legibility of the text. If lines are arranged too close together vertically, it is difficult for the eye to return to the next line accurately to continue reading. This disrupts the pattern of reading and interferes with communication. In addition to this paragraph, Figure 3 is an example of too little leading.

On the other hand, lines that are arranged too far apart

are distracting and difficult to read. They are aesthetically offensive as they form stripes rather than text.

The three types of vertical spacing available on the typewriter are referred to as single spacing, space and a half, and double spacing. Large bodies of text typed single spaced are tiring to read; a full page of text requires double spacing. The wordprocessor offers an additional size of leading beyond those found on the typewriter, otherwise known as triple spacing.

The computer, unlike the typewriter or wordprocessor, offers an infinite variety of spacings. Thus leading is another detail that is left for the operator to manage. Ideal leading considers many factors, such as the line length, typeface, and typesize, as well as purpose. This paragraph shows the computer's flexible application of leading. Another factor which influences the effect of leading is the length of the line. In general, shorter lines do not require as much lead as longer lines to create readable text. For example, if this paragraph were composed of shorter lines, then the leading used for the first line of this paragraph would be more appropriate.

LAYOUT The combination of horizontal and vertical spacing combined begin to present some issues related to layout. Layout is concerned with the organization of elements on the page. It is apparent that the limits of the typewriter and wordprocessor make layout decisions for users, while the computer relies on the user to make all layout decisions. The wordprocessor's and typewriter's limitations reduce the user's ability to create typographical errors which result in unreadable

text. Limitations do not mean that quality is impossible to achieve; on the contrary, they increase the odds that a good combination of elements will occur.

The previous examples show that the computer offers adjustable character and word spacing, type size and style, and leading and line length. These details together result in many complex decisions for the desktop publisher. Figure 3 demonstrates the possible result of a series of inappropriate decisions.

STYLES Typewriters have one style of type. So do wordprocessors. The computer, on the other hand, features many different *styles* of type. For example, *this is italic*, and **this is bold**. The computer also has special effects such as OUTLINE and *shadow!*

These brief examples make it clear that the limited choices experienced while working with the typewriter and wordprocessor do not provide desktop publishers with any background for making decisions concerning letter and word spacing, typesize, and style. These are not the only parameters that need to be considered. There is yet another feature peculiar to the computer—the availability of many different typefaces.

TYPE FACES

Readers are aware of, and unconsciously react to, many typefaces every day without recognizing the specific details of each. Once desktop publishers become familiar with the standard three or four faces supplied with the computer, they tire of the standard assortment and begin to search for others. What the educated user realizes is that the typographic details such as the placement and use of type are much more important than the variety. Unfortunately, many people believe that typefaces are a panacea to all of their design problems, and much valuable design time is wasted searching for the perfect face.

A new typeface will not fix most problems. Rather, careful consideration and arrangement of the elements in combination with white space on a page are what makes a design work, regardless of typeface.

More typefaces are not necessarily better, and *mixing* faces **and *styles only*** confuses **the issue**.

Unless, *of course,*

that IS

the issue.

STRATEGIES

The preceding discussion of the development of style and its attendant details provides the tools for a discussion of the remaining articles in this issue. Articles four and five, by Bojko and vande Kopple, respectively, are examples which utilize some of the current options available to desktop publishers—templates, and guidelines such as those found in magazines and books. While these materials certainly help desktop publishers make decisions, they do not necessarily help them make appropriate ones.

Articles six and seven, written by Garofalo and Cavalier, as well as the book reviews, are designed to show possible solutions to some of the problems experienced in articles three through five.

TEMPLATES The fourth article, by Bojko and Lenk, has been designed with a template. Templates are layouts that operate in conjunction with a layout program such as Pagemaker, Quark or Ventura Publisher[4].

Templates are useful because the user's sole responsibility is to "dump" text into specified areas of the template. The template pre–defines the typeface, style, leading, line lengths and placement of elements, thus providing solutions to many of the problems introduced above. Templates also offer a head start for more experienced users who prefer to further develop their own layouts.

The template used in figure 4a considers many of the details presented earlier. It defines the typeface, style, size, leading and line length. Typefaces are limited to two: *Helvetica Bold* is used for authors' names, copyright information and title. The other, *Times Roman*, is used for the text. This establishes a system of one face for text, and one for headings.

Typeface, together with size, establishes hierarchy. The straightforward characteristics of *Helvetica Bold* work well for headings, while *Times Roman* is an appropriate text face. Size helps to indicate the title is primary, and the authors' names and copyright information are secondary.

One of this template's shortcomings is the specified typesize, leading and line length chosen for the text. One possible solution retains the given line length and typesize and increases the leading. Another possibility is to retain the leading and decrease the typesize and line length. This illustrates the interconnected

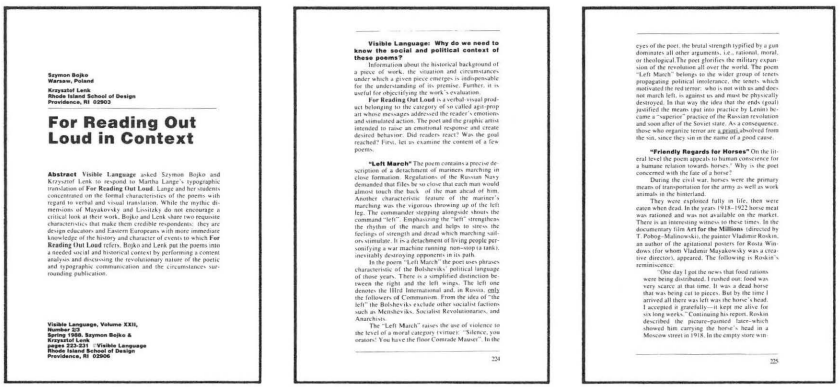

Figure 4a–c

nature of design details; they need to be balanced in relation to each other to work effectively.

The headings differ in size to differentiate the two levels of information, but the sizes specified on the template are too large. A smaller size differential would be more appropriate, and just as effective if placed well. Even so, the template used here is a better option than the previous example because it provides hierarchy and organizes the levels of text information.

Good templates offer guidance for developing publications and can speed production for both the beginner and the more experienced desktop publisher. But templates do not offer solutions for every problem. Because successful templates tend to be designed for a fairly specific use, many users cannot find templates that suit their purpose. Templates run under complex page layout programs that may make application difficult for novices. As more experienced users have the ability to develop their own designs, they often do so without realizing the benefits a template can offer.

GUIDELINES The fifth article is an example of what might be produced by a desktop publisher more experienced with page layout programs. Many magazines offer rules, hints, and tips for desktop publishing. Books, program handbooks, and other guides also provide tips on design; some are sound if employed correctly.

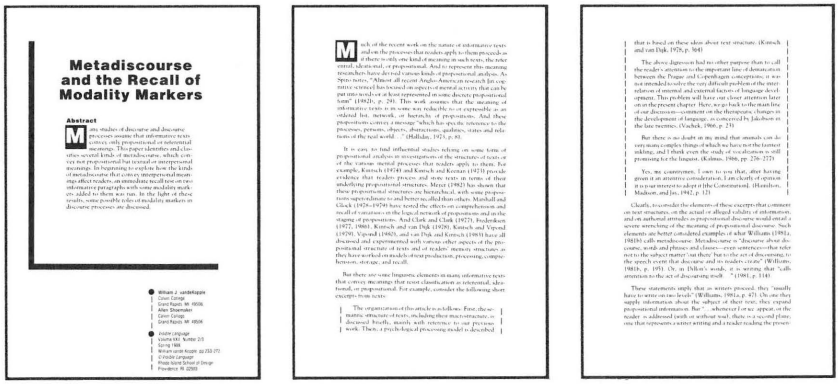

Figure 5a–c

This article follows a set of suggestions from *Publish*! magazine[5]. Figure 5a–c reproduces the first three pages of the article. The chaotic effect of the design is similar to that produced in article 3, and illustrates how the lack of context supplied with most hints leaves something to be desired in terms of application. While the visual elements are more sophisticated, they are not being used to their best advantage—the visuals overpower the text. The bullets are too large, and the page shadow and large type only distract, rather than guide the reader. The leading is tight, so the text parameters are not set for reading even though the article is composed of long text. This problem is similar to the leading problem shown in the previous article.

A growing number of periodicals offer guidelines for creating publications on the desktop. With so many sources to choose from, the desktop publisher needs help in deciding which tips to apply. Brief tips do not discuss the context in which they could be applied effectively. Even the best advice, taken out of context, can form the basis for poor design. The user needs a visual framework in which to locate both problem and solution.

DESIGNER The sixth article is Garofalo's typographic text study, reproduced here in figure 6a–c. It is important to realize that the computer is a tool for designing rather than a source of design creativity, therefore, parameters need to be assessed before the computer is turned on. Many people who have purchased desktop systems have been misled by advertising hype that emphasizes the ease of use while neglecting the importance of design fundamentals and process.

This article's design considers article content and its publication in *Visible Language*, and responds by limiting the typeface to *Palatino*. Text has a leading, line length, and character spacing for optimal reading.

The line is sufficiently long so that readers eyes are not forced to dart back and forth, and leaded so that the eye easily runs along the line and returns to the next one. The text body is left–ragged, with regular spacing between words, creating an even rhythm for reading. The character spacing has been increased from the default setting, making word recognition easier. These details combine to reduce distractions and eyestrain.

All spacings were tested on the Linotronic 300 to determine how the specifications would appear in final form. The "Linotron" is a more accurate printer than the laserprinter, and testing is necessary as most typefaces become lighter and more detailed when "linotronned".

This article provides an example of many of the details that need to be designed and their interrelationships. These details create difficulties for the person new to desktop publishing because the problems only become more complex with each new feature the computer offers.

ARTICLE SEVEN The last article, Cavalier's *Meditations*, is an example which builds upon the elements used in the design of the preceding articles. The article is reproduced in figure 7 a–c. It uses two typefaces, *Univers Condensed* for the title, headings, and figures; and *Trump Medieval* for the text. This design employs the same number of typefaces as articles four and five, but

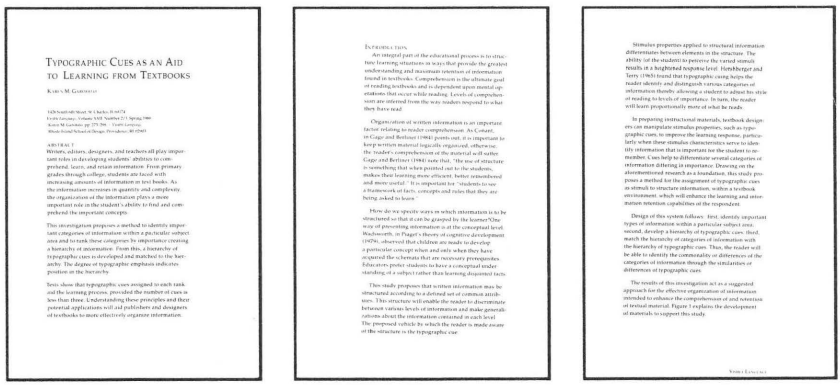

Figure 6a–c

is not as visually confusing because the text groups and weights are integrated. The typesizes are carefully balanced to develop a system of hierarchy and to help the eye move down the page.

As the number of elements such as typefaces, sizes, styles, and weights increase, it becomes more important to have the information and experience necessary to integrate them successfully. In many ways, a designer's knowledge of details is like that of a stereo or wine connoisseur; not everyone can hear or taste the finer points, but there is no doubt that they exist and that trained people can detect and respond to them. Discriminating between average and high quality is clear to all.

BOOK REVIEWS The book reviews utilize the same elements as Cavalier's article, but are organized differently. *Univers* is used for the headings and reviewer biographies, while *Trump Medieval* is used for the text and information related to the book being reviewed. Although the typefaces used are the same as those in the previous article, they demonstrate the flexibility that can be achieved with only two faces. This emphasizes the concept that successful design is based on the careful organization of the typefaces used, rather than a wide selection of typefaces.

The strength and flexibility of layout software make the computer a valuable design tool, but this feature is

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Todd Cavalier, pp.261-281 - Visible Language
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Meditation:

Visual Transition as a Bridge Between Form and Meaning

abstract Transition is the process of changing from one state, form, activity, or place to another. It affects objects, events, and phenomena, and is affected by them as well. As Heraclitus noted when he said "No man shall step in the same river twice", transition is described by the inexorable flow of space and time. It is the river as a continuum in which all things exist in perpetual change. Individual objects, events, and phenomena act as temporal intervals in its current. As a function of visual communication, the transition from one interval to another is a process of bridging one form to another, one element to another in a deliberate composition.

The transition from one element to another facilitates the identification of individual forms and functions. As such, transition is a bridge that connects separate elements in the formation of a system. It is the process of bridging separate forms and functions. It is a linking process that identifies a particular system and, when occurring sequentially, can functions to give meaning to what we see

Figures 1a and 1b
Assignment developed by
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Figure 2a
Morning flower arrangement. Courtesy of the Sogetsu School, Akasaka
7-Chome, Minato-Ku, Tokyo 107, Japan

structure as the guiding principle Structure is defined as the formal configuration of elements, parts, or constituents comprising a particular arrangement. Levi-Strauss noted that nothing can be understood short of the basic demands of structure. Although he was speaking of primitive society, his observations have implications that go far beyond a localized set of relationships.

For the designer of a visual composition, the transition from one element to another is controlled by placement (a selective process), and position (the arrangement of individual elements in relation to each other and to the overall frame in which they occur). Placement and position identify a structural framework through which unity is perceived between a diversity of elements (figure 1a). Structure guides the transition from one element to another in the formation of a deliberate composition(figure1b).

Transition as a continuous process. It is quantifiable only as a specific interval that joins or connects two or more features of an arrangement. As such, transition is recognizable only when occurring between a basic structural set of relationships. It occurs in the space between individual intervals or positions.

For example, in flower arranging the movement of the eye starts the dynamic between individual elements to identify a deliberate composition (figure 2a). By joining or connecting individual elements, the space between them acts as a bridge that leads the eye from one point or position to another (figure 2b). It is a bridge that leads both ways, both to and from a particular place or position. The space between individual elements is the field in which transition occurs.

Bridging links separate functions and identify a particular system. Identification of a

Figure 7a–c

easy to overlook in favor of the variety of superficial visual elements available. Desktop publishers need experience to see beyond the computer's seductive visual elements to the real communicative opportunities it offers. They need to shed the assumption that the computer creates designs in order to realize successful applications on their own.

SOLUTIONS

The progression of articles has presented evidence of the average desktop publisher's background and demonstrated that it offers little guidance for dealing with the infinite range of details that accompany desktop publishing on the computer. Templates and handbooks were presented as possible options, each having its own benefits and problems.

Templates offer specific solutions to many common desktop publications, but require users that are proficient with page layout programs. More experienced users prefer to produce their own templates without realizing the benefits templates offer. Unfortunately, even simple modifications can render a template ineffectual. A desktop publishing system does not save money if production is reduced and image is compromised. A hybrid alternative is to use a template developed by a designer in conjunction with a desktop publisher, directed towards the publisher's specific needs. The desktop publisher saves time and money in production and benefits from the understanding of details a designer brings to the problem.

The many available handbooks and how–to guides provide another source of information for desktop publishers, but do not offer any assurance of quality. The proliferation of how–to tricks and gimmicks requires sifting through literature to find pertinent information. There are inherent problems with these

guides; many explanations allow readers to recognize the problems in the given example, yet leave them incapable of solving their own problems. Few examples provide enough contextual information to make their suggestions truly useful.

Tips do help to introduce some elements of a visual vocabulary, and slowly work to encourage an awareness of typographic details. Their benefits are limited, though, as it is difficult for written information to transcend the passive learning stage and to play an active role in desktop publishing. This suggests that specific recommendations for details such as spacings, leadings and layouts would be of use to the unexperienced publisher. Gradually, through use, a desktop publisher could gain an understanding and appreciation for the concepts behind the initial specifications.

Self-instruction is likely to be most successful if guidelines regarding parameters such as type sizes and leadings are fixed. This leaves the user free to concentrate on relatively more flexible parameters such as placement. Through the process of working with a combination of specifications and limited options, desktop publishers could experience a controlled investigation similar to some of the methods designers use. Information provided in such a way would expand the user's experience base while allowing them to further develop their desktop publishing skills.

The difficulty of self-instruction makes training seminars and classes a potentially more effective alternative. Although more expensive than purchasing a 'smart' program or template, training reaches beyond solving immediate problems and into the realm of considering what the elements templates and programs are based on and their inter-relationships. Education for desktop publishers should incorporate both

training on page layout programs and an introduction to basic design concepts that address their interests. Education in design should include all of the details presented and begin to develop an awareness of good design. Education can provide specific answers to desktop design problems, while appreciation/awareness develops a desktop publishers experience base so that they can realize the potential as well as the limitations of their own systems and skills.

Training which increases awareness as well as teaches specific concepts can help desktop publishers discover the elements of quality design and good communication. Training is integral to recognizing the capabilities and limitations of the given system, including the users' own limitations. Appreciation is relevant because as desktop publishing becomes more developed, it is the design of the material that will make it successful, rather than the ability to manipulate programs.

Design adds personality and life to published material, and the best design should remain 'invisible'. The following analogy may help explain the transparency of good design. When you sit at a table for dinner and your knees hit the underside of the table, you notice it was badly designed–it is too short, and your legs hurt. When you sit down at a table that is perfectly adjusted, you notice dinner and don't think twice about the table. Good design helps you to get to the message without becoming entangled in the form that carries it. If used well, many of the special effects offered with desktop publishing programs can help make your publications exciting; if not, they take away your appetite.

FOOTNOTES

1 *Desktop Publishers Forum*, National Association of Desktop Publishers, January/February 1989, p. 1.

2 *Desktop*, International Typeface Corporation, March/April 1989, p. 34.

3 *101 Best Desktop Publishing Tips*, Publish!, p. 8, 1987.

4 Pagemaker is a registered trademark of Aldus Corporation; QuarkXPress ; Ventura Publisher is produced by Xerox for IBM PCs.

5 Lamar, Laura. "Newsletter Design TIPS", *Publish!*, March 1989, pp. 65-68.

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