VISIBLE LANGUAGE

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

Typography

Changes on the advisory board sometimes reaffirm a journal's direction or serve as notice that things are about to change significantly. The changes that follow are both a reaffirmation and a bellwether of change. Matthew Carter, son of the noted type historian Harry Carter and former apprentice punchcutter to Paul Raedisch of the Enschedé typefoundry in Haarlem, is a contemporary type designer who joins traditional type concepts with digital technology, as such he is a link between the past and the present. In contrast, Aaron Marcus, a designer particularly concerned with interface design, is a connection to the future. Shifting to a broader cultural focus, type design and typographic applications are practices in search of a more relevant history and cultural connection and even, dare I say it, in search of criticism. Estera Milman is an art historian and curator whose interests include the avant-garde as a cultural expression and Jan van Toorn is a graphic designer whose work is often a provocative and critical cultural reflection. Both of them bring the potential to expand on historical and critical content. With these changes *Visible Language* seeks to renew itself. I introduce with pleasure four new advisory board members.

Matthew Carter is a type designer who has participated in transitional technological moments: from metal to photographic emulsion and from emulsion to digital expression. He has been a participant in the digital revolution from its earliest days, first as a former principal at Bitstream and now as a principal of Carter & Cone Type Inc. He brings a classic humanistic approach to type design into the technological arena. He designed Galliard, a strongly calligraphic face based on a sixteenth century type by Robert Granjon. More recently, Carter designed Mantinia, a font of titling capitals, to compliment Galliard. In this font, Carter sought to play out expanded typographic options in an all capital font with superior

characters, variant characters and ligatures that explore letter combinations beyond those that are typical. Carter is a typographic scholar as well as a type designer and he is also a fully informed typographic technologist.

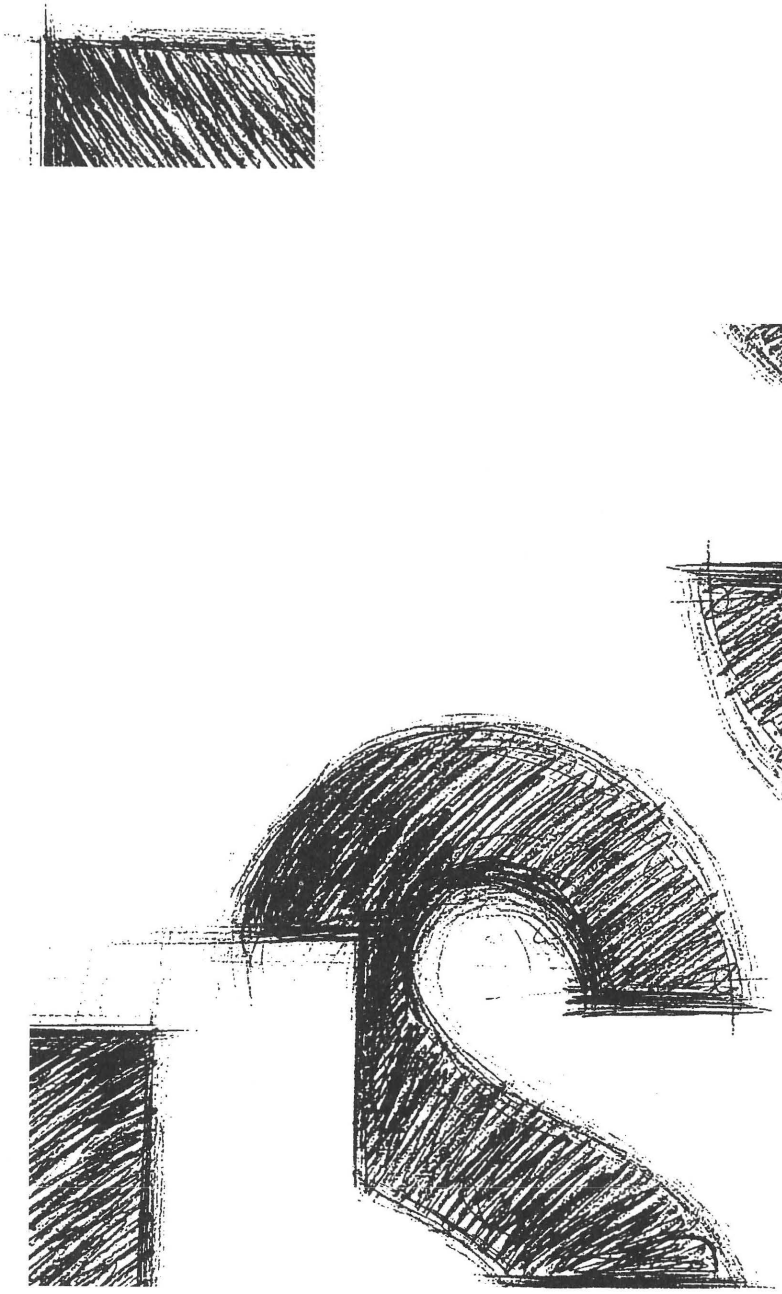
Aaron Marcus understood that a visual communication shift from print to the computer screen was underway long before other design practitioners saw it on the horizon. His traditional design education, which includes an advanced degree, compliments an undergraduate degree in Physics. This, perhaps, marks his interest in and ability to move between the sciences and the arts. After teaching design and working as a collaborator and communicator at various scientific laboratories, he founded Aaron Marcus and Associates in 1982. His area of expertise includes interface design, electronic document and presentation design and knowledge visualization. Besides his commissioned design activities, he has published books and papers covering a nearly complete range of visual communication vehicles or elements: charts, diagrams and maps; color; forms design; graphic design for computer graphics; multimedia design; signs, icons and symbols; typography; user interface design; and virtual reality and spatial displays. In the early days of the journal, Marcus published several papers here and guest edited a special issue, On the Edge of Meaning (11:2).

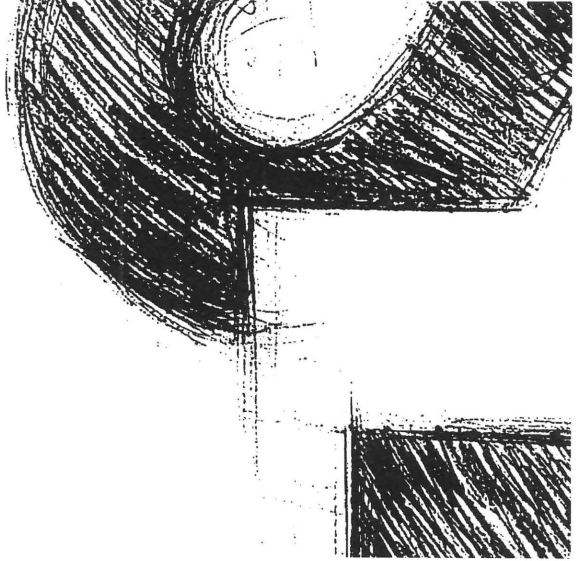
Estera Milman joined the University of Iowa's School of Art and Art History in 1979 as coordinator for the newly established Fine Arts Dada Archive and Research Center. In 1982 she founded Alternative Traditions in the Contemporary Arts, a project she continues to direct. This collection serves as a research base for scholars of the post-World War II avant-garde. The project also provides a support base for graduate students participating in the Program for Modern Studies. Her research and publishing activities are consciously designed to interface with exhibitions and special projects she has curated and directed. Examples of such integration are two special issues of *Visible Language*, guest edited by her in relation to a curated

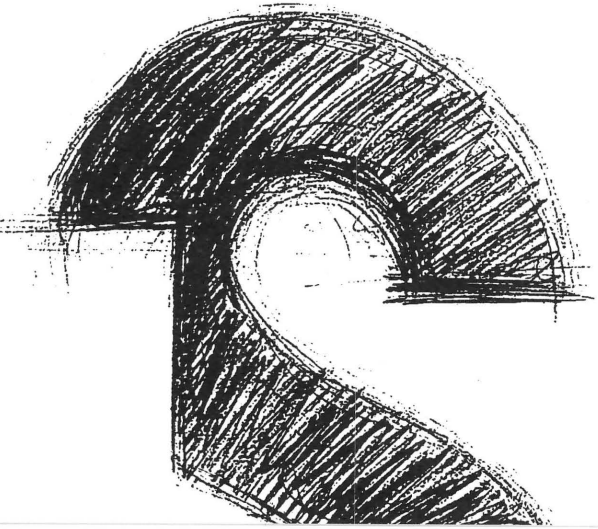
exhibition. They are The Avant-Garde and the Text (21:3/4) and Fluxus: A Conceptual Country (26:1/2). As a historian and scholar of twentieth century cultural studies, her activities are consistently concerned with the historiography of the field, that is to say, they are informed by the conviction that the writing of history (criticism or theory) can not help but be informed by a context specific agenda and that such is unavoidably the case, not only for the overtly ideologically-biased practitioners of these disciplines, but for their ideologically-neutral colleagues as well. She is more interested in the avant-garde as an art culture than in formalist interpretations of the historical avant-garde.

Jan van Toorn is a pre-eminent Dutch graphic designer. He was the first recipient of the Piet Zwart Prize and is a member of the Alliance Graphique Internationale. After teaching many years at the Rietveld Akademie, he has recently turned his attention exclusively to graduate education as the director of the Jan van Eyck Akademie in Maastricht, the Netherlands. The Jan van Eyck Akademie under van Toorn's guidance seeks to occupy the critical and theoretical void that other design schools have largely avoided. He seeks to locate the design activity in a philosophical context that questions the social condition and the typical premises of design production. "There are no messages — there is no culture without manipulation," consequently the role of the designer as cultural mediator is taken seriously. He is also a longtime occasional teacher in the graduate program at the Rhode Island School of Design, where he delights in asking difficult questions and challenging the "givens" of design.

These are unique and accomplished people who participate in the culture of visible language.







In order for design to be effective as a communication tool, it is necessary for designers to realize their task in the realm of meaning, not aesthetic form. To think the reverse implies that when we speak we think in terms of grammar rather than in terms of what we want to express. Visual signs help to define form and structure and are significant in their semantic function. When the visual signs are acted upon so that their relationship is somehow altered, its message is transformed as well. A series of typographic studies examine the relationship of designer, text and interpreter in the dialectical process of communication in which meaning is rendered and made explicit. Whether design can define and reveal structures

Katie Salen

Speaking in Text: The Resonance of Syntactic Difference in Text Interpretation

Katie Salen is an Assistant Professor in the Communication Arts and Design Department at Virginia Commonwealth University and a graphic designer with a particular interest in typography and visual language systems. Her research concentrates on the role of the visual (both text and image) in directing and transforming interpretation.

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of meaning in such a way as to alter the experience, interaction and expectations of its audience is the question. If so, can such a displacement of experience instigate a critical discourse between designer, culture and the individual?

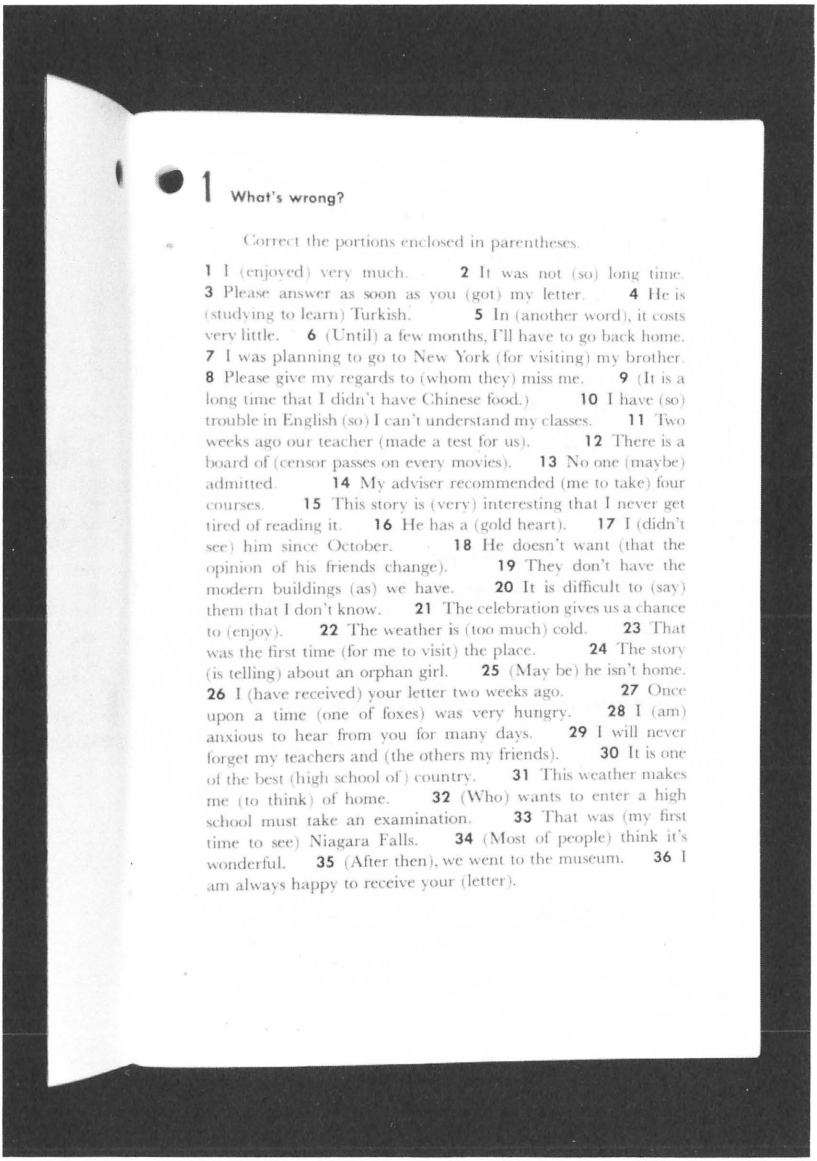
I is free.

Unless an image displaces itself from its natural state, it acquires no significance. Displacement causes resonance.

Shanta Gokhal

Often the shift is subtle.
Perhaps the wrong tense is used during the telling of a story.
Time and again the speaker's grammar is corrected
so that he or she will learn to speak without mistake.
Without displacement.
Without identity.

I is free.
Again the voice asserts itself,
claiming a different syntax,
a hidden voice,
a new meaning.
Here language structures the abyss of mental space.
It's an invisible architecture of the speaker's history and identity.
"Speak that I may see you."[1]
Speak that I may hear in your diction
a history different from my own.
Speak that I may see the significance of "to be."



1 What's wrong?

Correct the portions enclosed in parentheses.

1 I (enjoyed) very much. **2** It was not (so) long time. **3** Please answer as soon as you (got) my letter. **4** He is (studying to learn) Turkish. **5** In (another word), it costs very little. **6** (Until) a few months, I'll have to go back home. **7** I was planning to go to New York (for visiting) my brother. **8** Please give my regards to (whom they) miss me. **9** (It is a long time that I didn't have Chinese food.) **10** I have (so) trouble in English (so) I can't understand my classes. **11** Two weeks ago our teacher (made a test for us). **12** There is a board of (censor passes on every movies). **13** No one (maybe) admitted. **14** My adviser recommended (me to take) four courses. **15** This story is (very) interesting that I never get tired of reading it. **16** He has a (gold heart). **17** I (didn't see) him since October. **18** He doesn't want (that the opinion of his friends change). **19** They don't have the modern buildings (as) we have. **20** It is difficult to (say) them that I don't know. **21** The celebration gives us a chance to (enjoy). **22** The weather is (too much) cold. **23** That was the first time (for me to visit) the place. **24** The story (is telling) about an orphan girl. **25** (May be) he isn't home. **26** I (have received) your letter two weeks ago. **27** Once upon a time (one of foxes) was very hungry. **28** I (am) anxious to hear from you for many days. **29** I will never forget my teachers and (the others my friends). **30** It is one of the best (high school of) country. **31** This weather makes me (to think) of home. **32** (Who) wants to enter a high school must take an examination. **33** That was (my first time to see) Niagara Falls. **34** (Most of people) think it's wonderful. **35** (After then), we went to the museum. **36** I am always happy to receive your (letter).

Figure 1
Angela, Paratore. 1958. *English Exercises: English as a Second Language.* New York, New York: Rinehart and Company, Inc.

Speak that I maybe see you. It is not the words themselves that signify difference but their displacement within a codified system. The echo of this error carries with it an awareness of the interdependence of form and meaning. Thus a shift in syntax, the laws governing the structure of language, indicates significance through variation. With the renaming of conventional codes, the normally unconscious process of sentence construction is raised to consciousness. Displacement resonates and we are aware of our position in discourse. Language offers itself as a mirror or mask in the process of renaming.

Foucault, in *This is Not a Pipe*, states that, "It is in vain that we try to show, by use of metaphors, images or similes, what we are saying; the space where they achieve their splendor is not that deployed by one's eyes but that defined by the sequential elements of syntax."[2] What then, is the effect of the displacement of certain codes (syntax), within the system that constitutes language? Here syntax is understood to mean signs and their formal relationship to other signs while semantics refers to signs and their relationship to the objects for which they stand.[3] How is a shift in syntax tied to the construction and interpretation of meaning? For individuals learning to construct these codes in the "correct" way, displacement reveals difference. **You do not speak like me, therefore you are not like me.** A foreign language primer for students learning English as a second language regulates the use of syntax based on codified rules of grammar. Exercises intended to reinforce these codes tell a story of their own (*figure 1*). How much more significant are the "incorrect" answers to our understanding of these students and their position in this new discourse, than the faultless grammar they are designed to teach? How revealing these statements are about our own culture and its mixture of voices.

I is Free *(figures 2-4)* represents a visual document created to explore the resonance of syntactic displacement within a discourse of cultural identity. When we misspeak, whether it be a slip-of-the-tongue or a grammatical blunder, the semantic information generated through this syntactic violation greatly outweighs that of "correct" English. These mistakes reveal our relationship to the

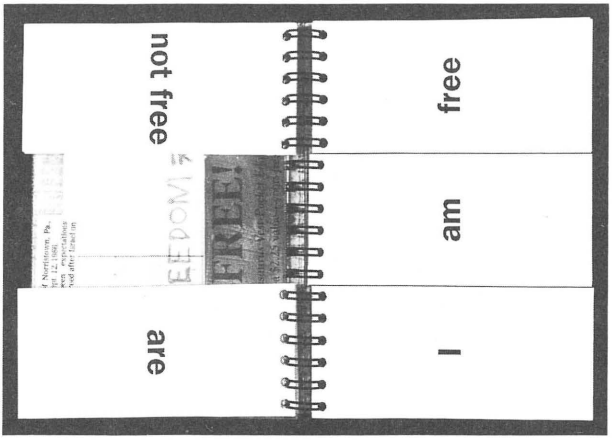


Figure 2

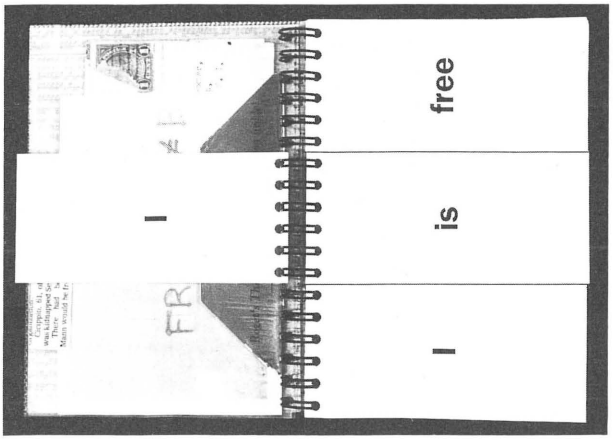


Figure 3

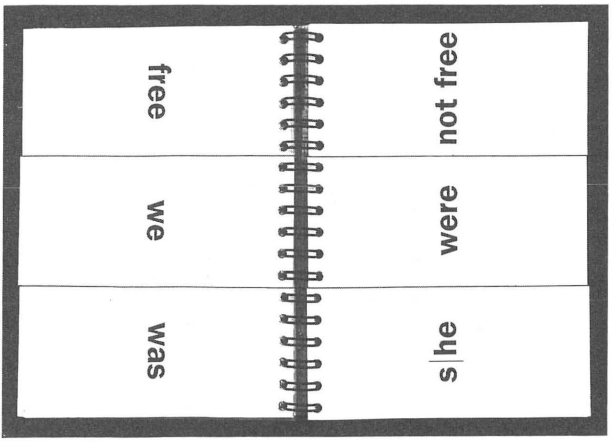


Figure 4

context in which we speak: our discourse holds within it the architecture of our identity; the possible history of our voice. Culture and context rendered opaque.

In addition, the commodification of language is addressed through the pairing of the word "free" with the "to be" verbs. The philosophical and economic duality of the word "free" sets up an ideological tension that reinforces the richness of its contradiction. Recontextualized definitions, or usages of the word as it appears in popular culture, are drawn from newspaper clippings, advertisements, graffiti and coupons. This semantic juxtaposition confronts the reader's expectations and provides a frame of reference for the syntactic dislocations of the text. These fluctuating grammatical combinations reveal the wealth of information to be found when language structures are violated. Words and phrases shaken from their habitual contexts and reconfigured syntactically resonate as a more significant level of meaning is reached.

Premise

If we consider design as the logic of relations in its semiotic sense, then form should be seen as derivative: it should emerge from the reasons for creating that form. But form is always a part of meaning, a factor determining content[4] (As visual signs are the entities through which we, as designers, define content). Syntax, whether verbal or visual, is directly tied to meaning and its interpretation. The visual signs of any work help to define form and structure and are significant in their semantic function. When these visual signs are acted upon so that their relationship is somehow altered, its intended message is transformed as well. Figure 5 illustrates the failure of a language system to support the meaning intended by the designer when its syntax was mistakenly redirected. The original poem consisted of a word "spelled" out of the missing letters from the four sets of alphabets, G-O-N-E. When invited to have this poem published, formal changes made in the translation basically erased all semantic implications of the original piece.

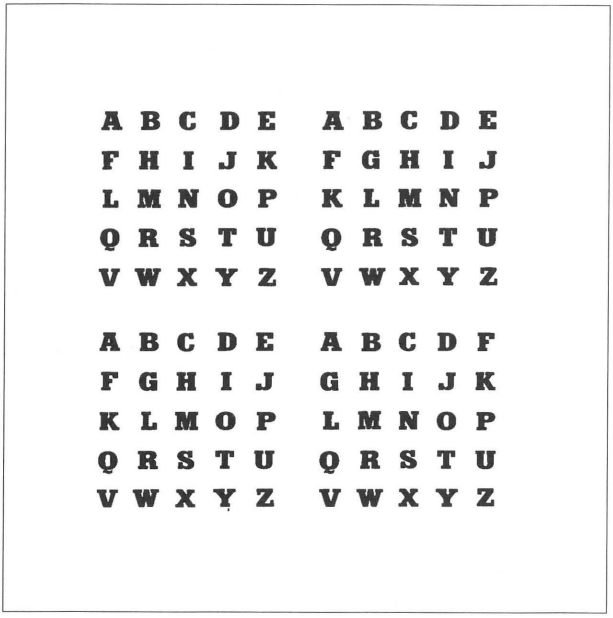


Figure 5a
Thomas Ockerse, 1972

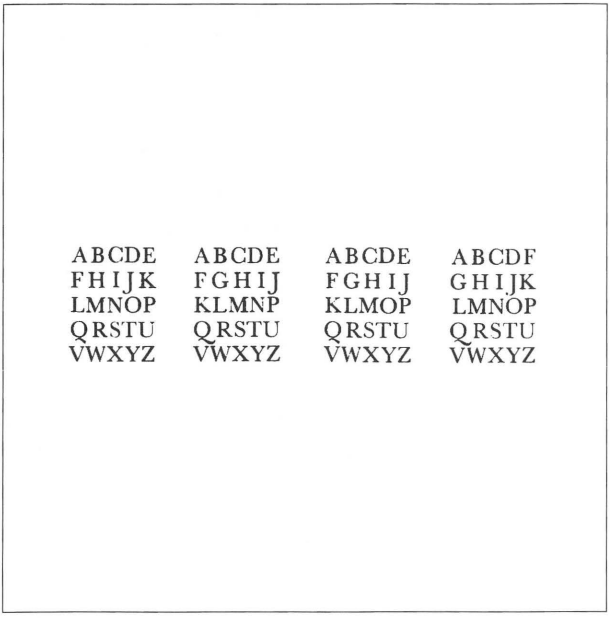


Figure 5b
Ockerse poem as designed / published by G.J. Rook for Exp/Press Card, 1972.

"When the results are compared, it is clear that the two typefaces do not represent the same meaning in their configurations of an alphabet system or in their ability to define an important syntax throughout. . . This syntactic consistency has definite semantic implications for the entire object. In this respect it is obvious that the significant components of the poem's original content were simply deleted, in the same way sentences or stanzas might be deleted from a conventional poem."[5]

This misrepresentation demonstrates the functional and visual link between syntax and semantics. But what does this relationship reveal and how can it be investigated within the realm of typography? What effect does syntactical displacement have on meaning and its interpretation?

I've wondered why it took us so long to catch on.
We saw it yet we didn't see it.
Conned, perhaps,
into thinking that the real action was metropolitan
and all this was just boring hinterland.
It was a puzzling thing.
The truth knocks on the door and you say,
"Go away. I'm looking for the truth,"
and so it goes away.

Zen and the Art of Motorcycle Maintenance

Gilles Deleuze writes, "Our civilization is not one of the image, but rather, a civilization of the cliche."[6] We often read images or texts on the level of metaphor and perceive meaning as something fixed and stable, already existing. This "way of seeing" has a long history and can be traced back to early models of pictorial space. It is in the *Sophist* that Plato first observes that painters suggest proportions not by following some objective canon but by judging them in relation to the angle from which they are seen by the observer.[7] During the Middle Ages, this mode of representation prevailed with the scientific and practical development of the technique of perspective. The various devices and models of perspective were just so many different concessions to the actual location of the observer in order to ensure that he looked at the figure in the "correct" way. Similarly, the laws governing textual

interpretation at this time were the laws ". . . of an authoritarian regime which guided the individual in his every action, prescribing the ends for him and offering him the means to attain them."[8] Because we carry with us this long history of prescribed vision we are comfortable in our acceptance of its truth. Our challenge comes in seeing an image as an image, without metaphor or preconstructed meanings. But to find again, to restore all that does not appear in the image requires disturbing the comfort and security of stable meaning. Meaning must be set into motion, a disengagement that leads to a different conception of reality and representation. Here no single reading can exhaust the dimensions of the text.

This advocacy of artistic structures that demand a particular involvement on the part of the audience challenges conventional representation. The multi-angled, super-imposed profiles of the filmed space; the variants of the magazine caption (Barthes); and the heterogeneity of the dissonant chord; all express an ideal embracing multitudinous and contradictory forms of expression. Bertold Brecht, in his conception of the epic theater, sought a similar end for his work, finding a voice within the realm of counterpossibility. His use of gest—of montage—was an attempt to use aesthetic form to mirror social reality; to question critical structure with critical structure. As Walter Benjamin notes, "Montage became the modern, constructive, active, unmelancholy form of allegory, namely the ability to connect dissimilars in such a way as to shock people into new recognitions and new understandings."[9] Implicit knowledge based on experience is made explicit through a process of self-awareness and reflection. This brandishing of nonconventional representation forced the interpreter to vacillate between possibility and paradox. Fixed interpretations were thrown into flux as ambiguity and multiplicity convinced people that their truths were provisional. They were made to supply the missing pieces for the puzzle — the puzzle that was their experience.

Expectations

Because we must be trained to expect structure before we can experience its violation, the issue of expectation must be addressed. Morse Peckham, writing on the phenomena of cognitive tension, found that, ". . . the frustration of an expectation becomes meaningful for the very reason that it makes the relationship between expectation and resolution explicit before bringing it to a conclusion."[10] This cycle of crisis and resolution requires that the interpreter confront the reality of the representation (referent) as much as the reality of the sign (meaning). Such a process makes explicit our contextual expectations and the restraints imposed on our way of seeing. In simple terms, the way of listening to a composition by Bach is radically different from the way of listening appropriate to a work by John Cage. Similarly, a novel by Beckett in a significant sense must be read differently from a work by Homer. Each require different perceptual-cognitive attitudes, or ways of approaching the information.[11]

These attitudes, or expectations, guide our interpretation in specific and often unacknowledged ways. Perceptual psychologists have studied the nature of cognitive structures that direct the way we gain visual information and have found that analysis of skilled sequential behaviors ". . . all suggest the existence of guiding structures of 'expectations,' 'cognitive maps,' or 'deep structure.'"[12] Stereotyped vision sees only those patterns which its stereotypes have permitted it to anticipate. But critical meaning is neither imposed or denied by these expectations. Rather, the visual codes that trigger the expectations are so firmly rooted in our language of seeing that no crisis of representation arises. No questions are asked by either the message or the receiver and significant communication is left unrealized. It is only when these expectations are somehow violated that the possibility for active (critical) interpretation arises.

Questions can be raised as to the degree to which expectations, based on visual structure, guide and limit the interpretation. One can ask whether 1) what is found is what the text says by virtue of its textual coherence and of an underlying signification system or 2) what the interpreter found in it by virtue of their own system of expectations.[13] Looking, like speaking, is not an act of indifference. These expectations are

a condition of the learning of the language of the visual. Many of our affairs are conducted under the assumption that our sense organs provide us with an accurate record independent of ourselves.

"Numerous experiments have shown that if a configuration is encountered which is not conventionally interpretable, which has no semantic function, which cannot be categorized by some existent categorical system, the perceiver cannot tolerate such a degree of cognitive tension and forthwise makes sense out of it, makes it meaningful, by assigning it to the range of an existent category, even when such assignment is wildly inappropriate."[14]

In trying to speak about what the world is like we must always remember that what we say depends on what we have learned; we ourselves, as producers of language, and of meaning, come into the process.

In the beginning was the gest he jousstly says, for the end is with woman, flesh-without-word, while the man to be is in worse case after than before since sheon the supine satisfies the verb to him! Toughtough, tootoological. There is the first person shingeller, Art an imperfect subjunctive.

Joyce

"When I choose to use a word,' Humpty Dumpty said, in a rather scornful tone, "it means exactly what I choose it to mean—neither more nor less."
"The question is," said Alice, "whether you can make words mean so many different things."
"The question is," said Humpty Dumpty, "which is the master—that's all.

Lewis Carroll

If one takes as language the systematic organization of our cultural codes—our inherited cultural horizon, within which meaning is made (and consciously formed)—expectation, based on how we learn to see and speak about the world, cannot be separated from the process of interpretation itself. The ongoing dialectic between the visual structure of what we experience and the contextual expectations this structure connotes, is rooted in the notion of language as a system that organizes differences into information that, as coded process, conveys meaning. Rather

than attesting to some fixed truth, such a system attests to its own truth or way of seeing: it pinpoints coordinates of meaning and plots them ". . . not against some master template of absolute value but in relation to each other, in the relative value of difference."[15] These differences become increasingly syntactic in the face of semantic necessity. A change in the syntactic structure affects the total organization of the discourse and determines both the density of its resonance and its provocative power. Such a change creates a dialogue between past and present forms and reveals representation as a construct, its meaning shifting and moving in a process of continuous displacement. Syntactic difference, the transformation of established visual and verbal structures through displacement, empowers the interpreter to "see" beyond the first reading, to enter into the silences between meaning in motion.

How strange a thing this Art of Writing did seem at its first Invention, we may guess by the late discovered Americans, who were amazed to see Men converse with Books, and could scarce make themselves to believe that a Paper could speak.

John Wilkins

Structures may deaden people to the impact of a certain image or, on the contrary, make them alive to them in a new way. In *Finnegans Wake*, James Joyce renamed structure as interval as a means of "retrieving that fantastic wealth of perception and experience stored in ordinary language." [16] When Joyce writes, "Otherways wesways like that provost scoffing bedoueen the jebel and the jypsian sea," [17] conventional codes are continually violated to create an open and ambiguous text. Syntax refuses closure and is recodified in terms of a musical score. The text personifies sound, its syntax molded to evoke rich aural connotations. At the same time, Joyce is also questioning the "representation" of language—violating its codes intentionally to talk about language at the level of language. Joyce's experimentation with semantic structures caused great anxiety in readers and critics alike as they sought to unify a syntax that embraced fragmentation and nonclosure. The form of the text

was transformed from a structure that moved to a structure within which the reader moved.

By disrupting and recodifying syntactic structures we are led to look at the ways in which the visual format of the text can change and intensify the ordinary continuities of language. Such a change in the visual structure enhances the reader's internal enactment of it, allowing the reader to sense a movement, rhythm, form—perhaps even its voice. This approach asks that meaning be sought in the arrangement of letters and words themselves before asking what the text as a single voice represents.

It follows, then, that the relationship between visual syntax and the semantic implications of any text must be understood in terms of the reader's experience with the piece of writing. Changing its physical form, altering its rhythm, emphasizing visual and verbal linkages, recodifying systems of punctuation, alters the manner in which the text is read. This transformation of the reader's experience has consequences on the level of interpretation. Visual syntax has the potential to transform meaning as typographic gestures create effects with both visual and aural dimensions. It was El Lissitzky who wrote,

"One must demand of the writer that he actually pay attention to typeface. After all, his thoughts reach us by means of the eye and not the ears. Therefore expressive typographic plasticity ought by its optic action to produce the same effect as both the voice and gestures of an orator." [18]

A text is meant to be looked at (not recited) and heard (with the internal ear). This internal enactment of the visual defines the distinction between silent reading and oral performance and also highlights the difference between poetry's use of visual devices and that of a text. In poetry, the intention is primarily aural, whereas with text, the subtleties do not translate to actual verbal speech but play with silent mediation. How can a change in visual structure affect that mediation between what our eye sees and what our inner ear hears?

In opposition to figure poems in which the text has the outlines of an object central to the poem, the configuration of the text is argued to be meaningful only when it pursues the goal of accenting statements, groups of words, or of establishing new relationships between units of text. This requires that the text be perceived as a system of interrelated parts, and its syntactic possibilities used as a blueprint for visual expression. The goal is to enhance or disrupt the rhythm of reading to make conspicuous the process of thought.

But what is the nature of the role that typographic distortion plays in the interpretation of a text? Taking a cue from e. e. cummings, we can say that visual distortions may be visual in nature but non-visual in function; they may function to regulate the speed of the reader's comprehension of words and sentences; or they may be used to create, reinforce or violate rhythmic ideas.[19] In each case there is a desire to direct the reader's experience.

Syntactic distortion affords the opportunity to intensify a statement or to subvert or violate a conventional interpretation. In addition to visual effects, a text may gain significant sound values from breaking up and rearranging words. When e. e. cummings writes: [20]

nouns to nouns
wan
wan
too nons too
and
and
nuns two nuns
w an d
ering
in sin
g ular unthe knowndulous s
pring

it is the fragmentation, repetition and unusual word breaks that constitute the poem's richness. Its semantic implications would be lost if presented in a conventional free-verse format. Cummings' overall intent, then, is not primarily visual: he is regulating the manner in which the reader reads.

Investigation

The following figures represent a typographic study developed to question the arbitrariness of print conventions (punctuation, alignment, capitalization, etc.) in relation to the semantic potential of a non-poetic text. The intention was to use indentation and other typographic devices for visual and rhythmic purposes beyond the effect of creating verselike lines or melodic phrases. John Sparrow, in his study of inscriptions, found that the quality of the impact that a piece of writing makes upon our minds may, in part, be determined by the layout and particularly by the lineation of the text in which it is embodied on the page. [21] From this we can conclude that the meaning of a text does not depend primarily on the concreteness of words or on their referential quality. Meaning is directed by what happens on the printed page

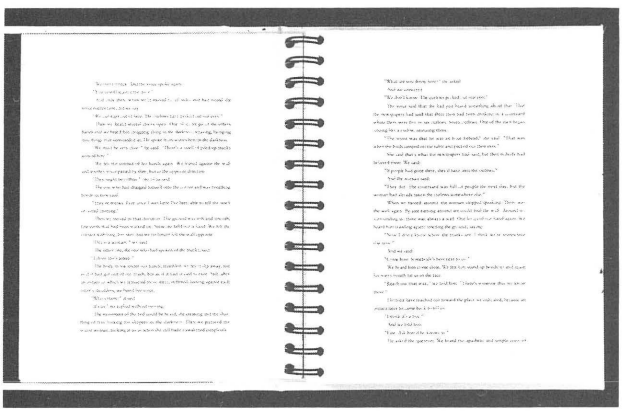


Figure 6

itself. And, as Walter Ong notes, "Print situates words in space more relentlessly than writing ever did. Writing moves words from the sound world to a world of visual space, but print locks words into position in this space. Control of this space is everything." [22]

The change in visual structure from figure 6 to figure 7 has aesthetic as well as semantic implications. The use of the double dash, line spacing and indentation has the effect of opening up the visual space on the page, particularly if there are several instances in close proximity. They—their content, their sound, their look—are more noticeable than if they were buried in the lines of a paragraph. The reader is encouraged to read across and within the text, identifying visual and verbal linkages made evident through their fragmentation and isolation in space. Further, the visual appearance of the text influences our expectations as to the context of the writing. Where figure 6 is seen to represent a typical page of text from a book, figures 7–9 take on the associations of a poetic text. This perceived shift in context brings with it a new set of expectations for the reader and establishes an interesting paradox. If the rhythms and consequently the meaning of the text can be altered by changing not the words themselves, but the context in which they are understood, then it follows that ". . . poetic effects are as much the consequence of the attitude and condition of the reader as they are the products of the writer's intention." [23]

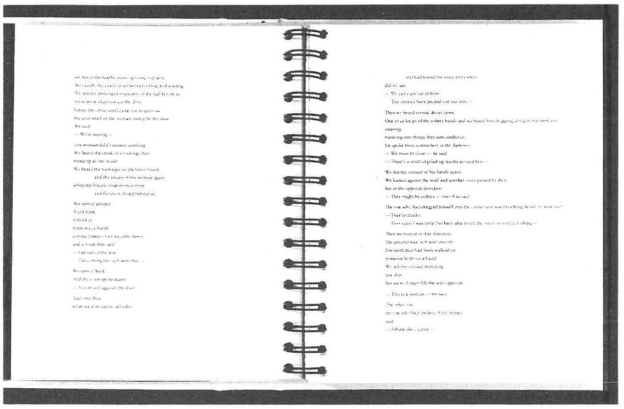


Figure 7

But we can go further than this. Rhythms and intonational sequences which we regard as poetic are found in many different expressive contexts. Richard Bradford, in an article entitled "The Visual Poem in the Eighteenth Century," discovered that ". . . by implication, it would seem that our

response to such sequences is determined by our visual recognition of the text. Text presented to look like poetry may in fact be read as poetry."[24]

Historically, printed text was seen as something to be read aloud. As seen in figure 8, the verse-like appearance developed out of a desire to enhance the rhythm of reading by breaking the text based on natural breathing. Visual convention was replaced by an aural interpretation emphasizing the rhythmic intonation of the passage. This recognition and use of the aural value of writing revealed an approach for a dimensional and differentiated text interpretation.

When punctuation and spacing are used to gain special effects from the temporal or visual factor in language a kind of visual syncopation emerges. Figure 10 shows a case where simply breaking the text line each time the pronoun "we" appeared, causes a new visual and semantic framework to emerge. The voice of the "we" in the text penetrates both the eye and the internal ear. Replaced by an insistent and syncopated voice, the neutrality of the text is lost. As a result there is the potential for a re-reading of the text.

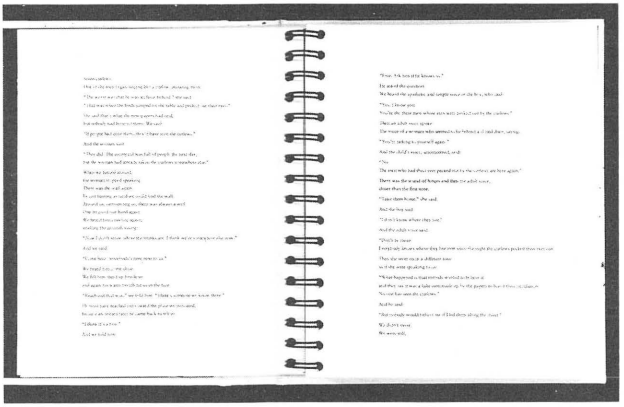


Figure 8

Intentional silences (space) differ radically in semantic terms from accidental silences based on convention. Arbitrary line length, based on typesetting technology, ignores textual intonations specific to any piece of writing. In such cases the

author's voice disappears beneath the surface of consistent and nonvarying line length. An awareness of graphic space as a structural element can make this voice explicit. When a text uses pause and intonation as significant elements of its composition, the voice of the writer re-enters the text. Space and time reveal a rich and varied landscape saturated by previously hidden textual relationships. The intrusion of the pause into the syntax of the sentence influences visual and semantic structures.

Conclusion

For any piece of communication the meaning of the whole is not a *picture*, but the knowledge acquired from the path of that process which makes any picture visible. [25] This path emerges from the interaction between the visual signs of any work and the meanings they evoke through the act of interpretation. The functioning of a text must then be explained by considering not only its generative process but also, as the previous discussion has indicated, the role performed by the interpreter and the way in which the text foresees and directs this kind of interpretive coop-

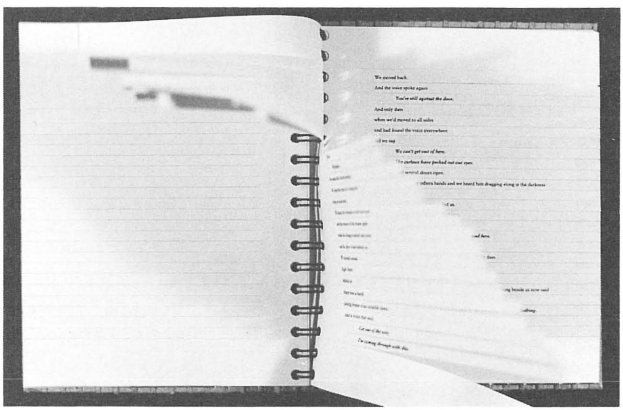


Figure 9

eration. The resonance of this meaning increases as the process of reflection deepens. Typographic design that questions convention engages readings beyond itself and acknowledges the privileged role of the interpreter in the communication process.

We return finally to a question that underscores this discussion of the transformation of syntax and its effect on the construction of meaning. Who owns the interpretation? Is it the writer or the designer? The reader or the social milieu? Because every interpreter mediates a text to his or her own reality, perhaps it is the latter that holds real significance. Although each work has its own set of constraints, its own limits and its own rules, its meaning can never be fully determined by its visual form. Rather, the language that it speaks can change the way it is experienced by the interpreter. **Speak that I may tell you what I see.**

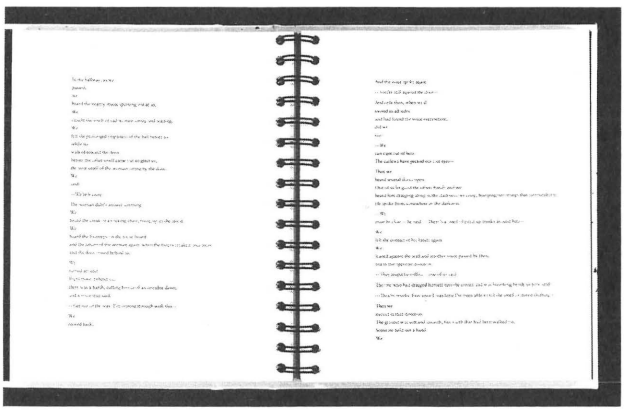


Figure 10

Endnotes

1 Edmund Carpenter. 1970. *They Became What They Beheld.* New York, New York: Outerbridge and Dienstfrey, 22.

2 Michel Foucault. 1982. *This is Not a Pipe.* London: University of California Press, 2.

3 Charles Peirce. 1984. Collected Papers. Charles and Paul Weiss (eds.). Cambridge, Massachusetts: The Belknap Press of Harvard University Press.

4 Andrew Waterman. 1989. Soundings Along the Lines. *Visible Language* 23:1, 130.

5 Thomas Ockerse. 1984. De-Sign / Supersign. *Semiotica* 52: 3/4, 248.

6 Trinh T. Min-ha. 1991. A Minute Too Long. *When the Moon Waxes Red. Representation, Gender and Cultural Politics*, New York: Routledge, 115.

7 Umberto Eco 1989. *The Open Work.* Cambridge, Massachusetts: Harvard University Press, 7.

8 Douglas Hofstadter. 1979. *Gödel, Escher, Bach: An Eternal Golden Braid.* New York: Vintage Books, 90.

9 Walter Benjamin. 1966. *Understanding Brecht.* London: Verso, xiii.

10 Morse Peckham. Art and Disorder. *Literature and Psychology,* XVI (spring), 89.

11 Douglas Hofstadter, *Gödel, Escher, Bach: An Eternal Golden Braid,* 167.

12 E. H. Gombrich. 1972. The Mask and the Face: The Perception of Physiognomic Likeness in Life and in Art. *Art, Perception and Reality.* Baltimore, Maryland: Johns Hopkins Press, 61.

13 Umberto Eco. 1990. *The Limits of Interpretation.* Bloomington, Indiana: Indiana University Press, 51.

14 Morse Peckham. Art and Disorder. *Literature and Psychology,* XVI (spring), 90.

15 Bill Nichols. 1981. *Ideology and the Image: Social Representation in the Cinema and Other Media.* Bloomington, Indiana: University of Indiana Press, 77.

16 Joseph Kosuth. 1989. The Play of the Unsayable: A Preface and Ten Remarks on Art and Wittgenstein. *Das Spiel des Unsagbaren: Ludwig Wittgenstein uns die Kunst des 20.* Jahrhunderts, n.p.

17 James Joyce. 1939. *Finnegans Wake.* New York: Penguin Books, 5.

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19 Barry A. Marks. 1964. E.E. Cummings. Baltimore, Maryland: Johns Hopkins Press, 117.

20 E. E. Cummings. 1954. Poems 1923-1954, New York: Harcourt Brace & World, 365.

21 Eleanor Berry. 1989. Visual Form in Free Verse. *Visible Language* 23:1, 99.

22 Walter Ong. 1982. *Orality and Literacy.* London: Routledge, 67.

23 Richard Bradford. 1989. The Visual Poem in the Eighteenth Century. *Visible Language* 23:1, 9.

24 Richard Bradford, The Visual Poem, 10.

25 Joseph Kosuth. 1991. Art After Philosophy and After. *Collected Writings 1966-1990.* Cambridge, Massachusetts: MIT Press, 53.

The founding document of present day New Zealand, the nine sheets of the "Treaty of Waitangi," is explored in terms of the Maori chiefs' signatures signatures and their significance in European and tribal custom. The original signatures were extremely small as the space designated for them was only 5 mm — they were dominated by the attempted English spelling of the chiefs' names. The author enlarged the signatures in order to better examine their form and study their inter-relationships. These signatures were further enlarged and manipulated to become a series of nine silkscreen prints celebrating the event.

Max Hailstone

"Te Tiriti" (The Treaty)

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Visible Language 27:3
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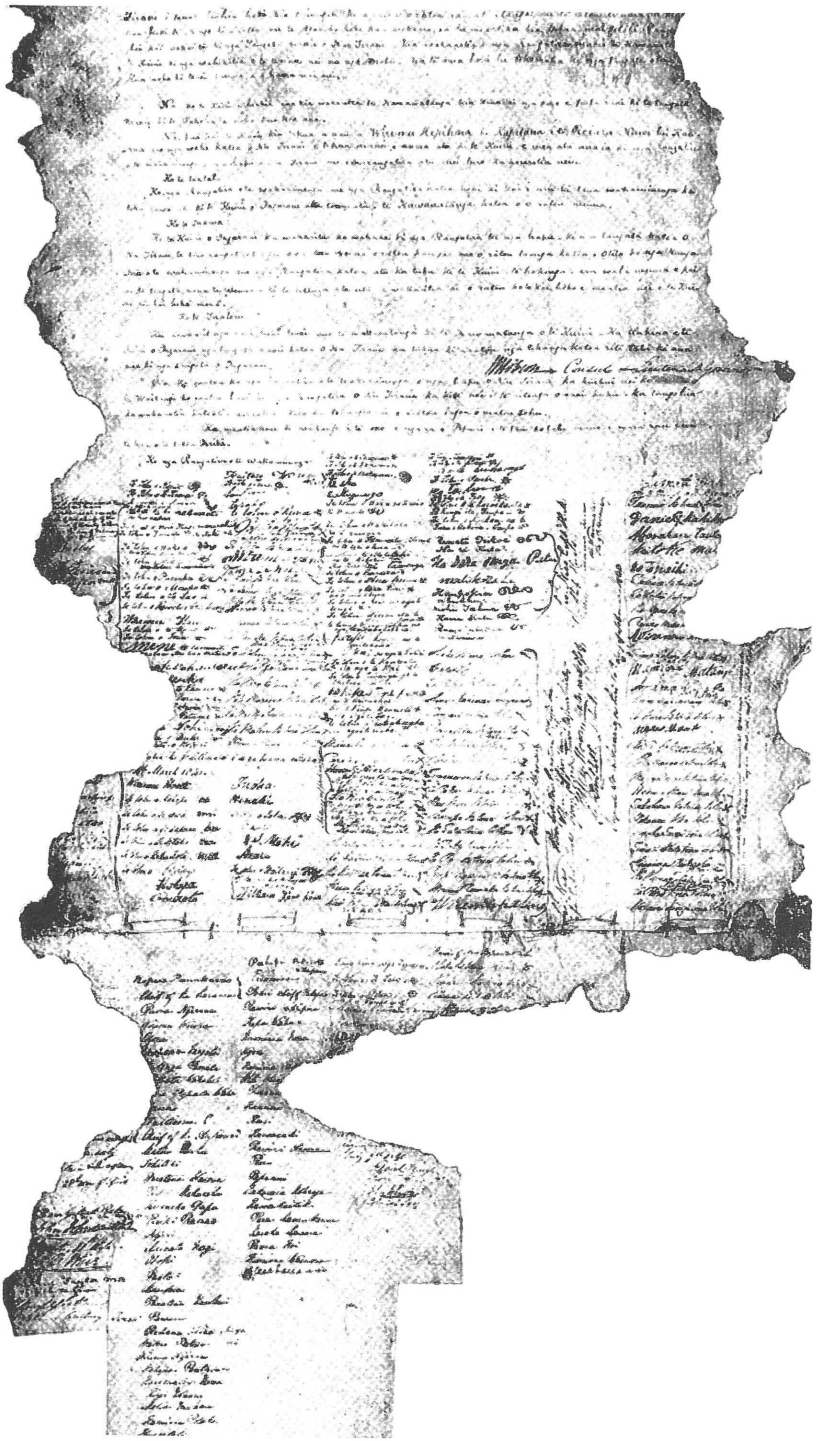


Figure 1
The original Treaty of Waitangi.

The Treaty of Waitangi is the founding and most important document in New Zealand. It is a treaty that forged the terms and relationships between the indigenous people of Aotearoa (New Zealand), the Maori, and the British government. The original sheets of the Treaty are held in the National Archives in Wellington, New Zealand (*see figure 1)*. All except one are produced in the Maori language and are, except for the 'Printed Version,' written in longhand. On each are the names, signatures, parts of their *mokos* or marks of the Maori chiefs who wished to support the terms of the Treaty.

By the time the Treaty of Waitangi was signed in 1840, the British and Maori people were no strangers to each other having had seventy years of social contact. After the voyages of Cook, British trade and Christianity were directed towards New Zealand. While the missionaries spread Christianity, the traders exploited the natural resources. The traders were initially concerned with sealing and whaling, but their interests soon turned toward timber, flax, ship-building and finally, general trading.

When the Europeans arrived they found the Maori to have a culture which relied almost exclusively on an oral tradition rather than one based on the written word.[1] Their visual language, while adequate for its purpose, was nevertheless extremely limited. Because of this lack of writing, being asked to 'write a mark on a piece of parchment' thereby pledging one's allegiance to a 'Queen' on the other side of the world may well have been for many of the chiefs their first encounter with a pen. They certainly were unaware of the binding properties and degree of commitment that was the underlying cultural agreement signaled by their signature.

The main 'Treaty of Waitangi Sheet' was signed at Waitangi on the 6th of February, 1840. After the signing, William Hobson, then British Governor General, decided that although two hundred and forty chiefs had signed the document, they did not represent the whole of New Zealand. Seven copies of the Treaty were made and dispatched with government representatives to various regions of the country to obtain the signatures and support of other chiefs who for various reasons had not been

able to travel to Waitangi. These sheets are now identified by the specific region they cover. After they were brought back, the Treaty was set in type, printed and distributed throughout the country announcing more publicly that it had substantial support and was now in force. Five additional chiefs who had not previously signed the original nor any of the other sheets, signed a 'Printed Version' which now constitutes the ninth part of the Treaty of Waitangi.

It is these nine sheets, the original Treaty, the seven copies and the printed version that are the basis for this series of silkscreen prints. The number of signatures on each varies considerably as follows: 240, 132, 41, 39, 27, 26, 21 and 5. Each of the prints is based on one of the treaty sheets and contains all and only the signatures, both European and Maori, that appear on that particular sheet.

Sixteen years ago my own interest in these marks was piqued, when I first came across a set of facsimiles of the Treaty. I was intrigued by the variety and strangeness of the marks, realizing that these marks were in all probability the first marks written by many of the chiefs as well as perhaps among the earliest examples of indigenous writing from New Zealand. The fact that they were made on such an auspicious document made them all the more intriguing.

This interest was again aroused in 1990, when a student of mine was working on a project concerning the land claims of a local but very large and important tribe, the Ngai Tahu. This claim was being heard by the Waitangi Tribunal, a government tribunal set up to hear Maori grievances in terms of the Treaty and to rectify wrong doings if at all possible. Because of the intense interest surrounding the Tribunal and its judgments, much discussion and argument was taking place concerning the wording and intention of these documents in very cool, legal and political terms. This cool approach seemed to forget that first and foremost the Treaty was a document of the people — drawn up by people and agreed to by people and signed in good faith for future generations — it was more of a spiritual guideline than a clinically legal undertaking. It was with this in mind that I decided to reproduce the Treaty from 'the other side'

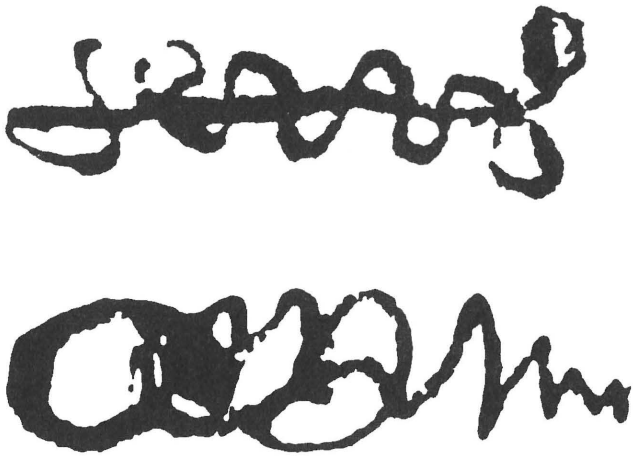


Figure 2
Two separate signatures of Te Rauparaha.

as it were, dealing only with the people and their signatures without which there would be no validity to the document whatsoever. This approach forces the viewer to become involved with the people and their very human contribution. For the Maori people the prints represent much more than simple marks, they are part of their ancestors and as such maintain their spiritual qualities quite often moving them to tears or private reflection, quite unrelated the Treaty's political or legal relevance. For the European, they are seen as art objects which fit European art-making traditions. In either case, cultural consciousness regarding the Treaty is increased regardless of the reference point.

Throughout the project small interesting details came to light. First, it was widely believed that the signing of the Treaty was solely the perogative of the chiefs who were all men. However, a handful of signatures made by women appear including one on "The Waikato Heads Sheet," an area notorious for its strong male chiefs and strict maoridom. To one signature, "a man alone" was appended, indicating that this chief had signed without the support of his tribe. To

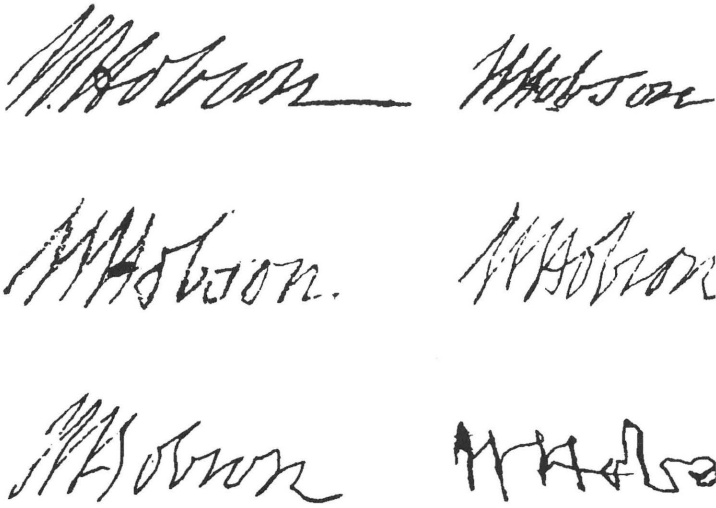


Figure 3
Governor General Hobson's deteriorating signatures.

another was appended "deceased" an indication that the chief was not only dead, but that the tribe was as yet without a new chief and until that was resolved the old one would reign.

Te Rauparaha, a very famous and notorious warrior chief, signed the Treaty once, but at a later date, was asked to sign another copy again. He flatly refused. However after discussion he was persuaded to sign again and did but with a completely different signature (*see figure 2*).

Of the five hundred and forty-four signatures only a handful of names were of European origin. They were mainly biblical such as Timotai (Timothy), Wirimu (William), Hona (Jonah), all others are unique. Obtaining true identification was sometimes impossible if the European scribes' writing was illegible as there was nothing to compare the signature with. It could not be verified.

In the case of Governor General Hobson, it is interesting to note that within the short time that it took to make the seven copies of the original Treaty, Parkinsons' disease overtook him as evidenced in his rapidly deteriorating handwriting documented by his own signatures (*see figure 3*).

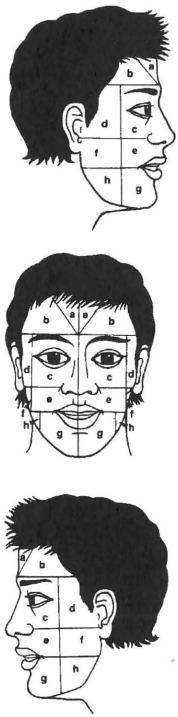


Figure 4
Maori divisions of the face.
a) Ngakaipikirau (rank), titi design, center forehead.
b) Ngunga (position) tiwhana and ngunga designs, brow.
c) Uirere (hapu rank) pongiangia and paepae designs, eyes, nose.
d) Uma (1st or 2nd marriage) putaringa design, temples.
e) Raurau (signature) pitau, rerepehi designs, under nose.
f) Taiohou (work) putake design, cheek.
g) Wairau (mana) pukauwae design, chin.
h) Taitoto (birth status) riparipa design, jaw.

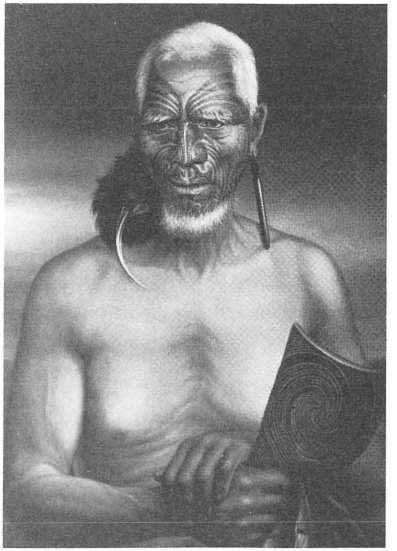
Reprinted with permission from Ko Te Riria and Davis Simmons, *Maori Tattoo*. Auckland, New Zealand: The Bush Press, 1990.

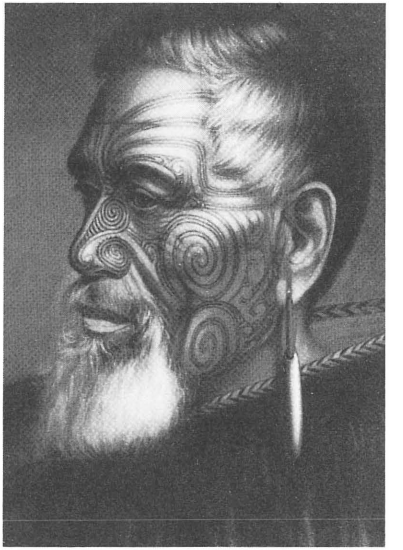
The Maori signatures/marks that appear on the Treaty can be categorized into four main types of mark. First, there are the 'pictorial' or figurative marks which owe much to the spiral of the fern frond almost certainly representative of a part of a particular chief's *moko.* The *moko* which was widely used and may be seen as the closest mark to a written language, is visible in the design and construction of the facial tattoos (mokos). These were worn by both men and women, although those of the men were far more ornate and quite often covered the whole face, whereas those of the women were usually limited to the area between the bottom lip and chin. The men were usually men of significance and the designs were constructed within strict divisions of the face (*see figure 4*). By the use of conventional 'universal' patterns that could be deciphered by all, the identity, importance and lineage (from both parents) could be 'read' and understood by all. The spiral motif and its variations are derived from and characteristic of the naturally abundant and various ferns of New Zealand *(see figures 5 and 6*). It is therefore not surprising to find among the five hundred and forty-four signatures of the Maori chiefs that some are based upon their own *mokos* (*see figure 7*).

Second, there are simple crosses which were obviously demonstrated and encouraged by the European representatives at the various signings (*see figure 8*). Third, there are quasi or "fake" signatures which were obviously modeled on that of Hobson whose signature appeared on the Treaty prior to the Maori chiefs signing and would in all probability have been pointed out by the Europeans present *(see figure 9*).

Finally, there are true European-style signatures which were made by those chiefs who had been in contact with the missionaries and administrators and who had been taught to write their names using the Roman alphabet (*see figure 10*).

While looking at the various sheets of the Treaty one might be forgiven for thinking that the signatures/marks were a product of regional imagery or mark-making tradition. While there are identifiable regional differences in woodcarving and weaving, these are not evident in the signatures. Since there was





Figures 5 and 6
Two views of facial tattoos.

no written tradition, it is likely that whichever chief first signed the respective copy of the Treaty, set the precedent for the others who would not wish to loose face — hence the almost total agreement in terms of style and image used on each sheet. This is clearly seen in The Waikato Heads Sheet, The Tauranga Sheet, The East Coast Sheet, The Eastern Bay of Plenty Sheet and The *Herald* Kapiti/South Island Sheet. (*See figures 11-15*)

On the original sheets of the Treaty most of the signatures were approximately 5mm high and were, in the main, subsumed by the attempted European spellings of the names of the chiefs. This necessitated careful photography and extraction of each signature, at all times being careful not to lose its correct orientation and identification. Bromide prints were then made of each one, 544 in all, to approximately 50 mm high. Each was then carefully identified and catalogued under its respective sheet of the Treaty.

The next stage was to assemble and organize the signatures from each sheet. All decisions concerning the differences in size were made with two main considerations in mind: either marks that were found to be more "interesting," or marks that were considered to be more useful in compositional terms were enlarged.[2] There is no difference inferred in terms of importance by the difference in size. To the Maori, all are of equal importance, although a bias towards one's own ancestors would be quite natural (*see figure 16*).

Endnotes

1 This does not in any way reflect upon the intelligence of the Maori people — quite the contrary. The Maori were a highly intelligent race and soon embraced the ideas of reading and writing. William Colenso, New Zealand's first printer, produced many religious publications for the missionaries using an alphabet of nineteen characters designating five vowels and fourteen consonants.

2 The prints are printed in two colors (black and gray), silkscreened on Arches Rives BKF300, 1200 x 800mm in an edition of 20 of which 10 are reserved in complete portfolios of all nine prints.

Figure 7
Spiral motif characteristics of coiled fern fronds.

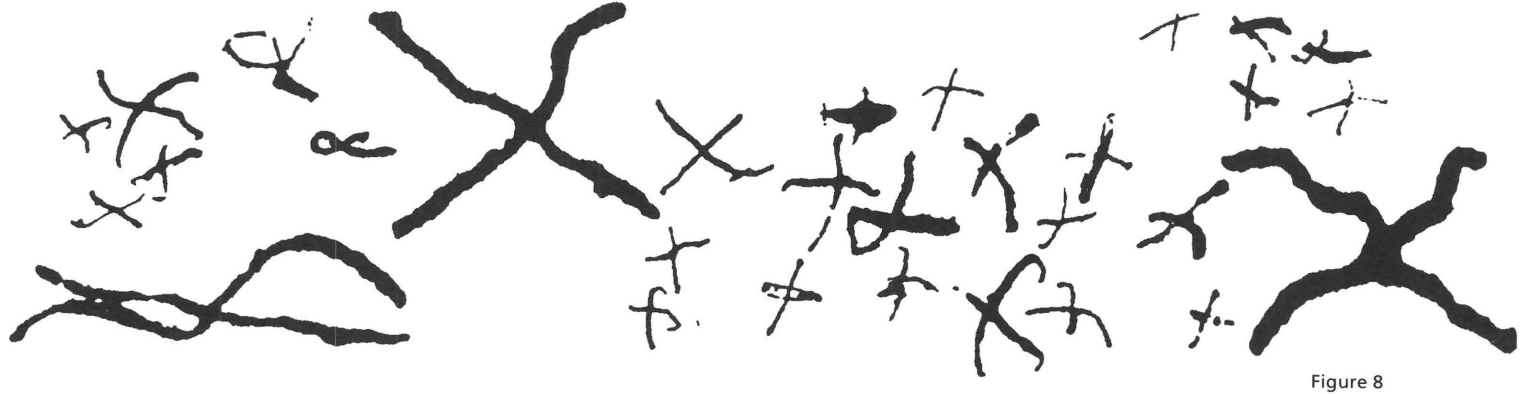


Figure 8
The western-favored "x."

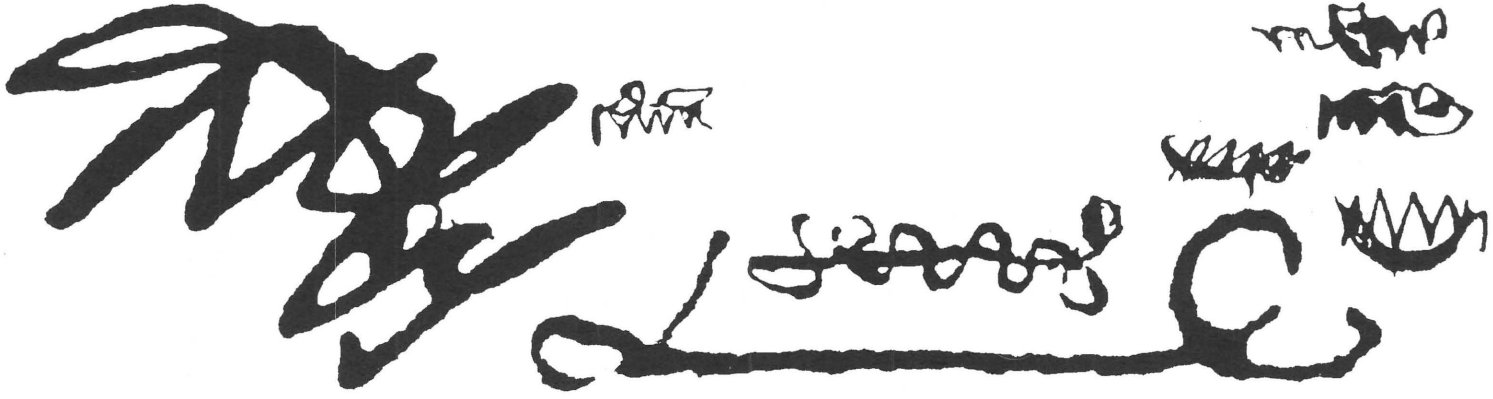


Figure 9
"Fake" signatures.

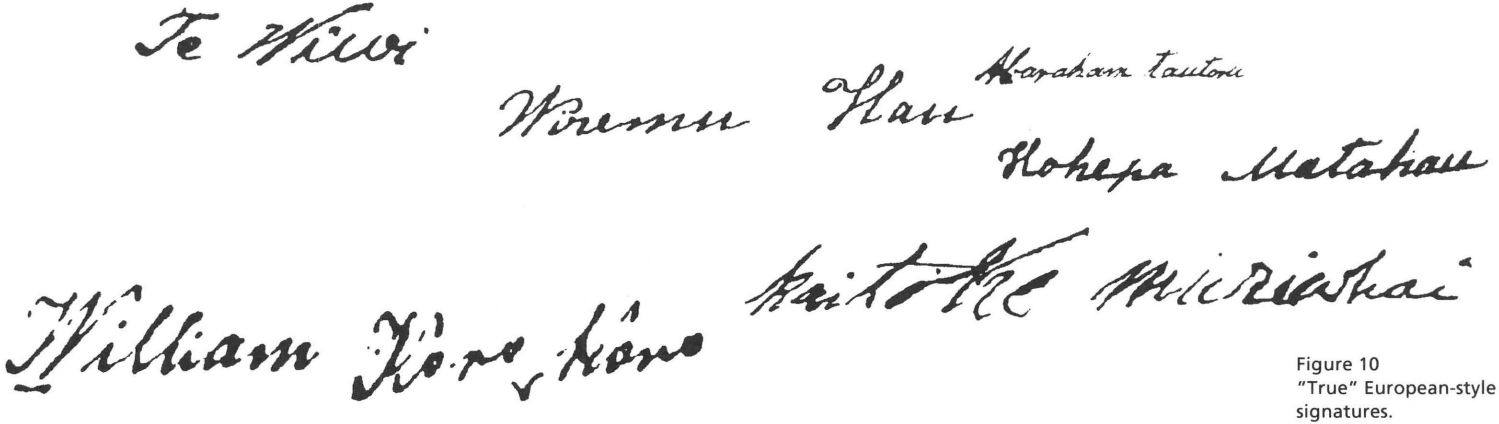


Figure 10
"True" European-style signatures.

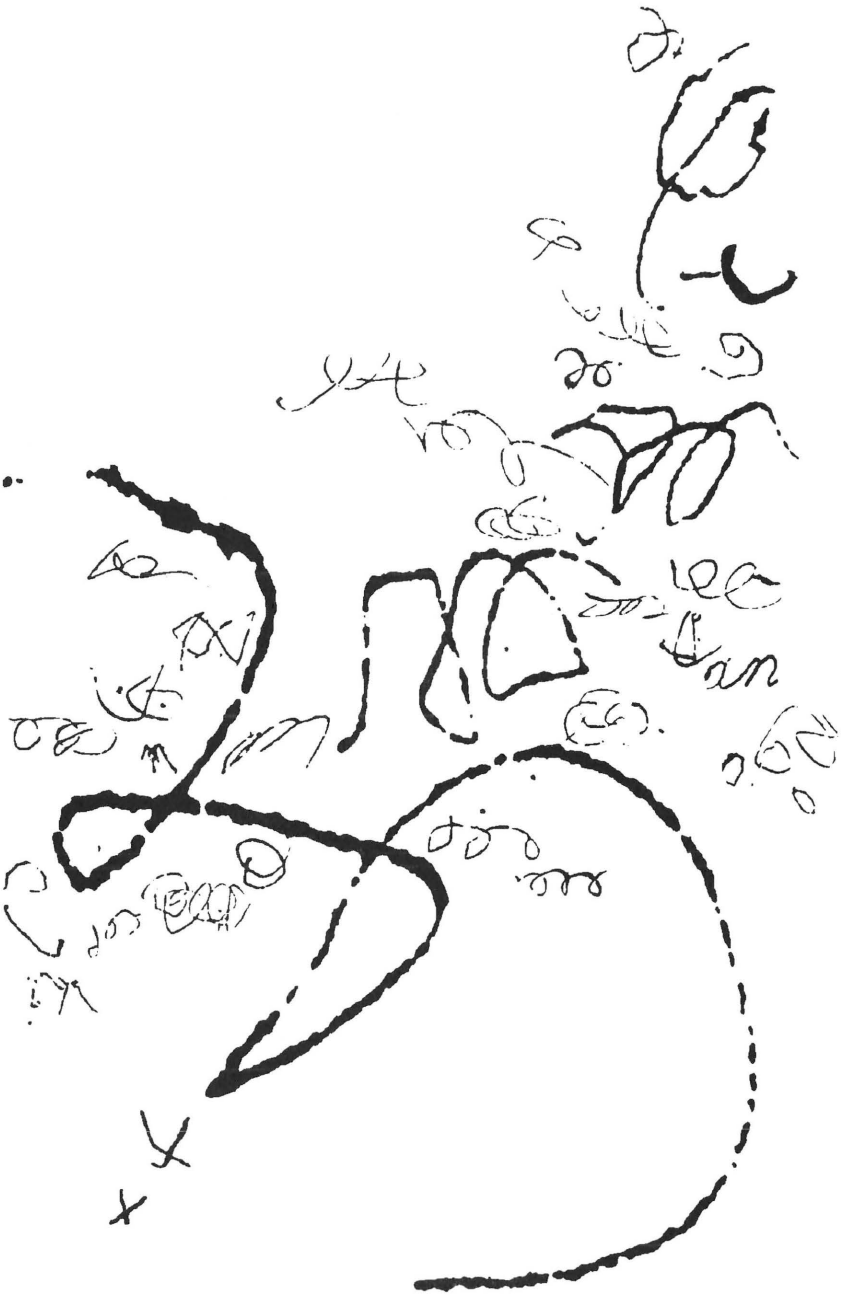


Figure 11
The Waikato Heads Sheet

Figure 12
The East Coast Sheet

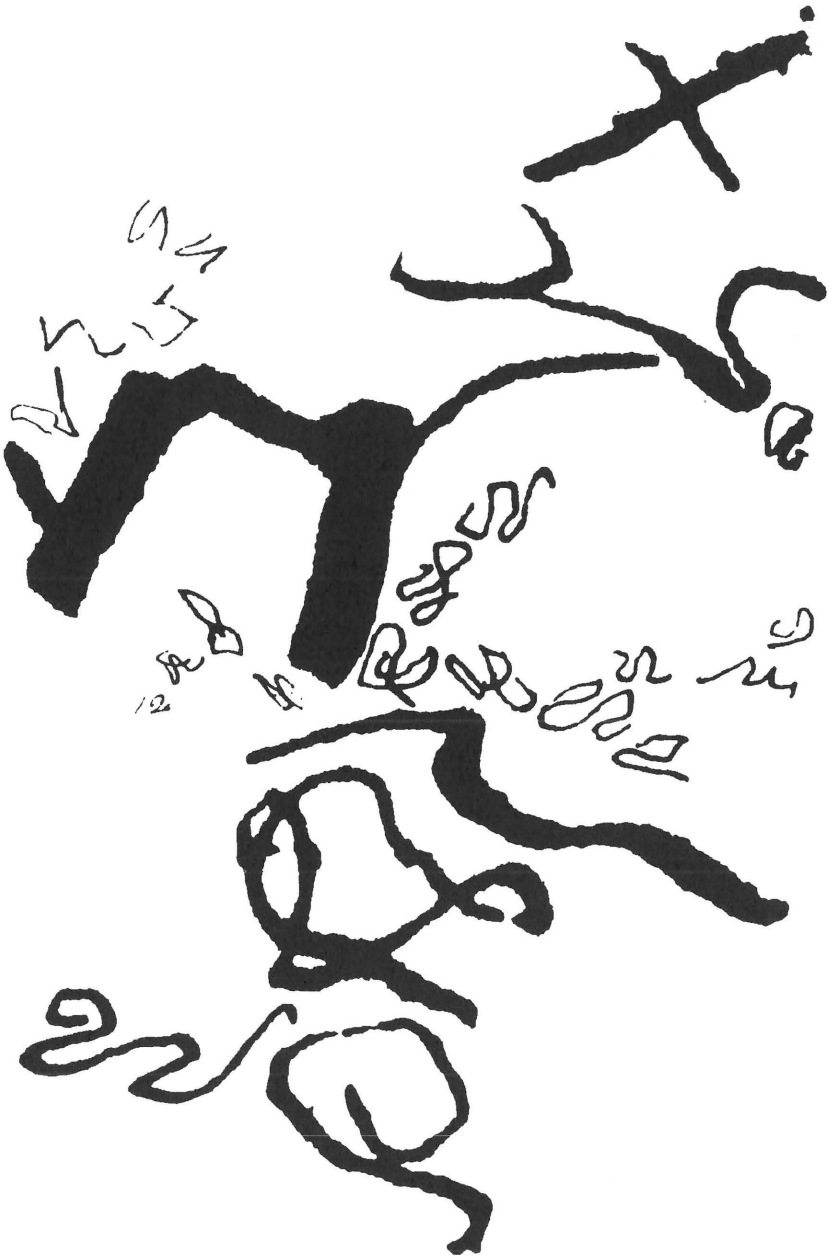


Figure 13
The Eastern Bay of Plenty Sheet

Figure 14
The *Herald*: South Island Kapiti Sheet

Figure 15
The Main Treaty

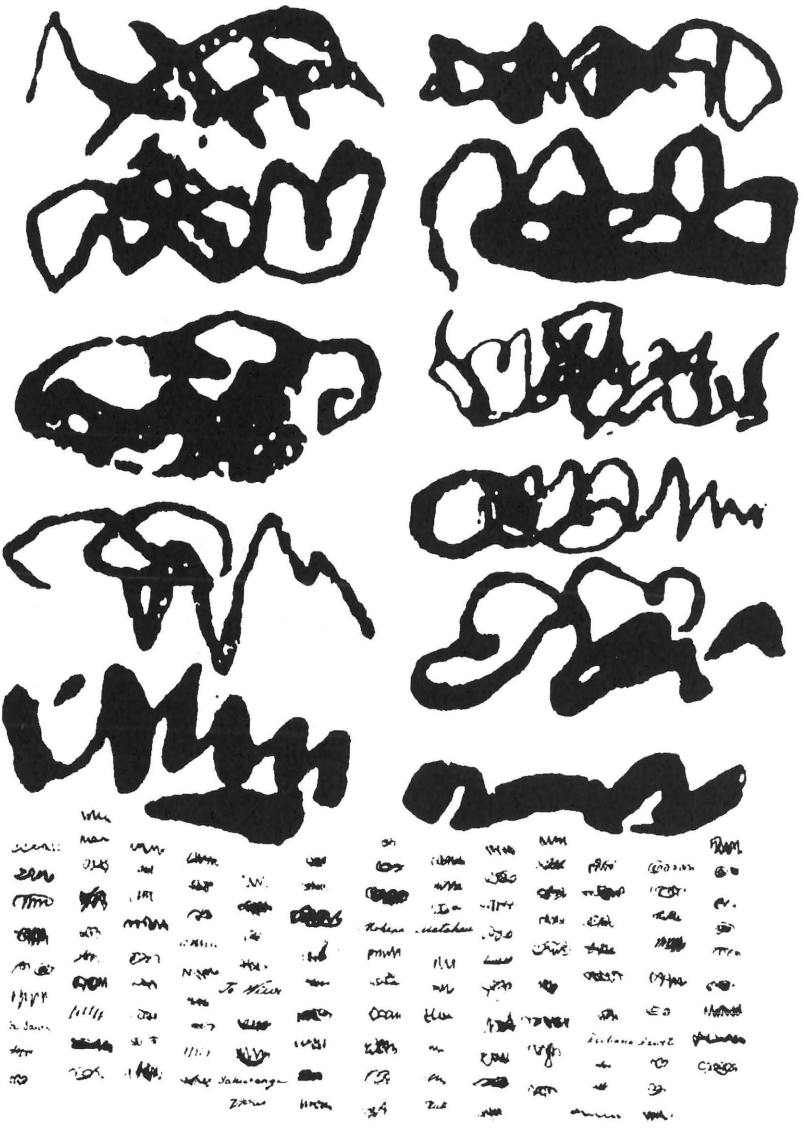
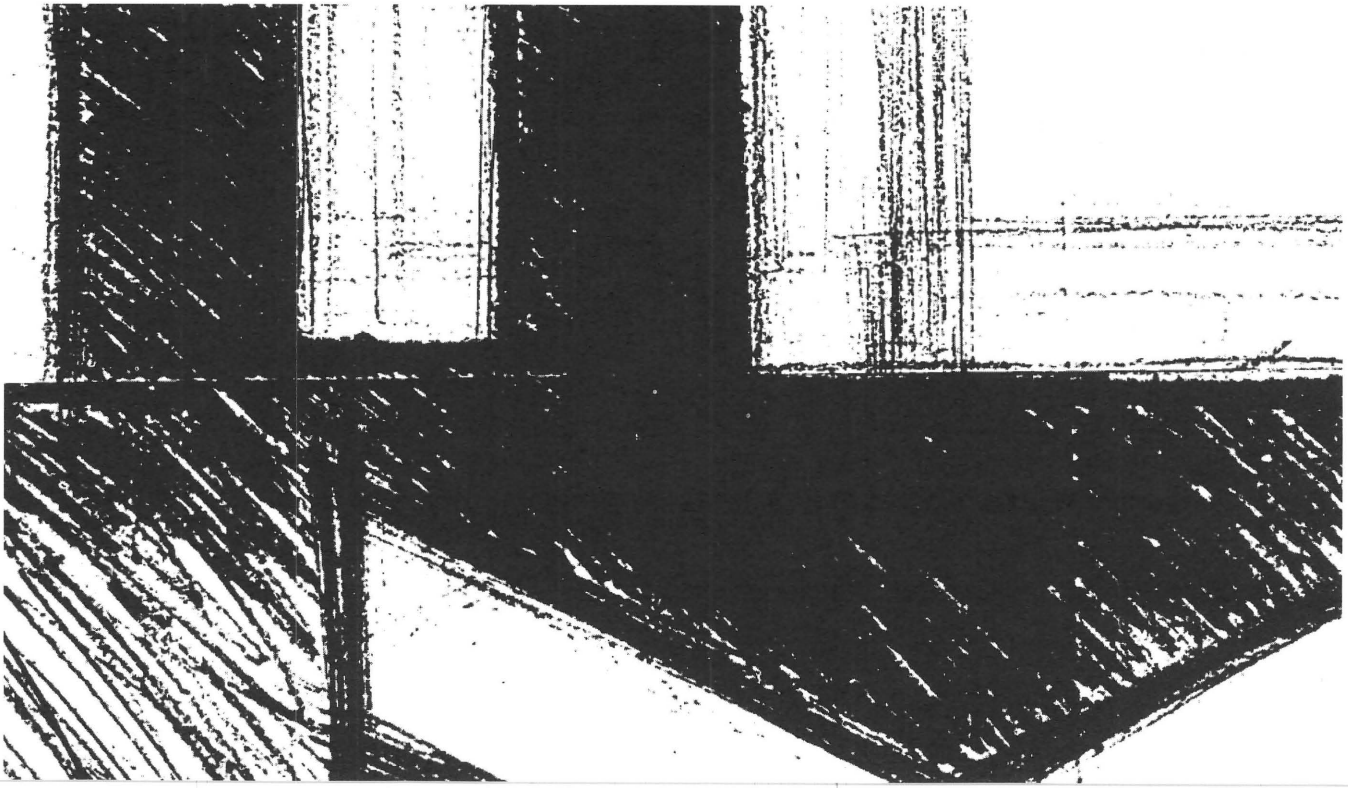
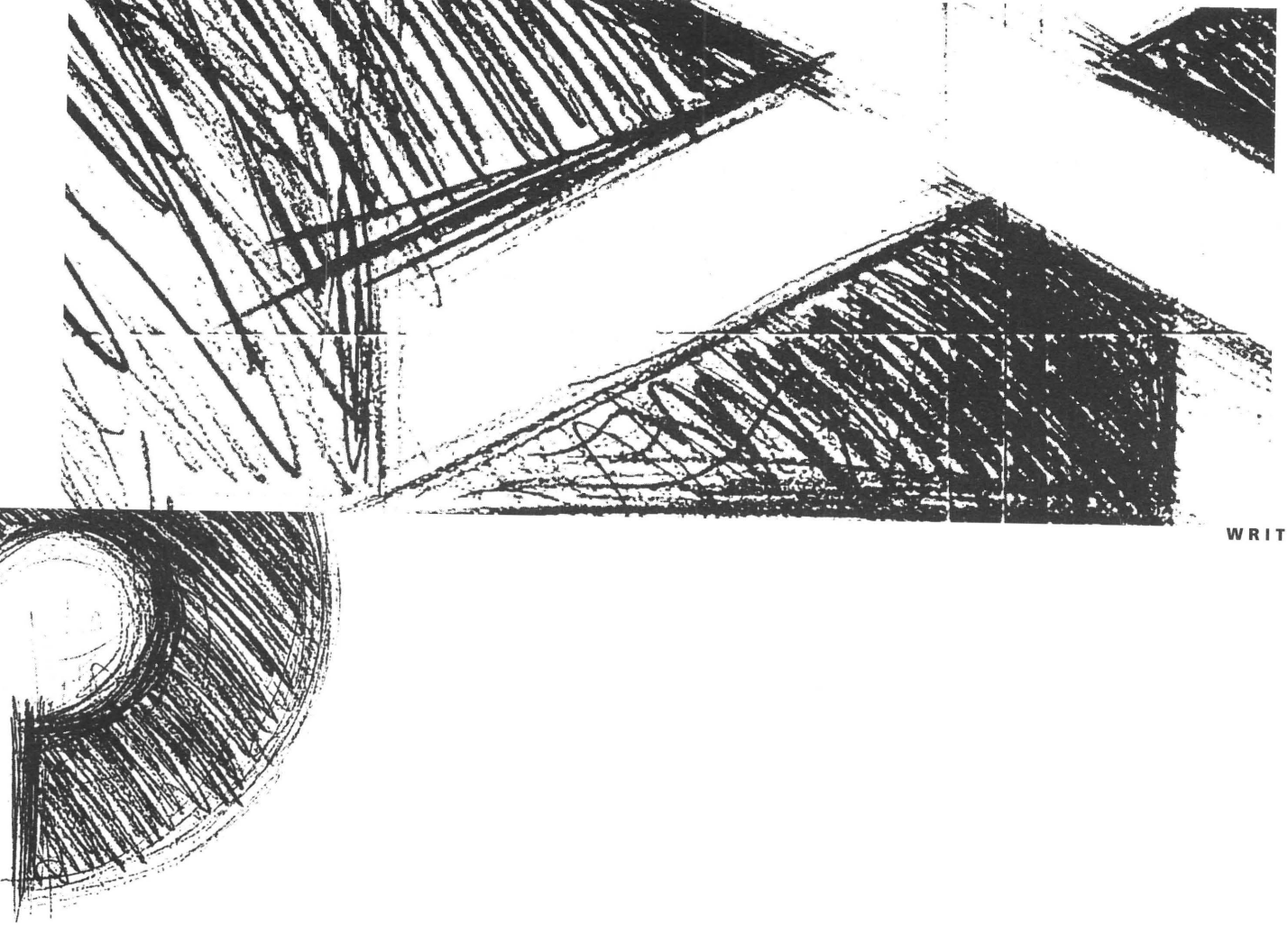


Figure 16
The Cook Strait Sheet





In order to write using specific, vivid detail, students first need to see that it is possible to communicate subtleties of feeling and perception powerfully through imagery. Davis believes that the interplay between illustrative objectivity and artistic expression is nearly the same, in essence, in the imagery of poetry and in the imagery of painting. He suggests ways in which apprentice writers, in an era in which the hyperaestheticized visual surface of life predominates over linguistic articulation, can, in assimilating visual imagery, feel free for a moment from the requirement to portray their imaginative experience in language, an experience which later allows them to portray their experience linguistically

Christopher Davis

Saving Pictures from the Flood: Using Visual Art in Creative Writing Workshops

Christopher Davis is an assistant professor in creative writing (poetry) at the University of North Carolina at Charlotte. He is a graduate of the Iowa Writer's Workshop and is a published poet with *The Tyrant of the Past and the Slave of the Future*, which received the 1988 Associated Writing Programs award. His second collection, *The Patriot*, is circulating in manuscript. He is currently leading a poetry writing workshop for HIV positive people and writing a related anthology workbook which will be published by Texas Tech University Press.

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Visible Language, 27:3
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with less inhibition. Davis discusses the nature and function of imagery in poetry and visual art, and describes the dilemma of attempting to convince students to "show," rather than "tell," when in their experience exciting imagery is cheap, easy and void of meaning. He talks of the ways in which the paintings of Francis Bacon stimulated his own young imagination, making Modernist poetry an accessible, emotionally viable role model for his apprentice poetry. Finally, he shows how the imagery in particular paintings by Andy Warhol, Ralph Goings and Larry Rivers can demonstrate specific ways in which a voiceless image can articulate meaning to students.

In the five years I have been teaching creative writing workshops, I have learned to use reproductions of pieces of visual art as exemplary texts, clarifying the complex functions of, and suggesting possibilities for, imagery. Paintings, photographs and pieces of sculpture have been used in writing workshops for many years as "triggers" for writing exercises — a workshop device probably brought into being by this century's famous poems with paintings as their central subjects, such as *Pictures from Breughal*, "Museé des Beaux Arts," "Self Portrait in a Convex Mirror" and so on. I prefer to use visual art, initially at least, in an instructive, rather than an immediately creatively cathartic, way.

In order to write using specific, vivid detail, students first need to see that it is possible to communicate subtleties of feeling and perception powerfully through imagery. "Show, don't tell," is an absurd rule today until one understands that a visual image is, in true art, a kind of phenomenological language, expressing the artist's cognition of retinal experience, or exposing the artist's dreamlife, no matter how photographically realistic the image on the canvas. As the modern British painter Francis Bacon says in *The Brutality of Fact*, a book of interviews one could use as a supplemental text in a writing workshop: "An illustrational form tells you through the intelligence immediately what the form is about, whereas a non-illustrational form works first upon sensation and then slowly leaks back into fact." Through learning to appreciate the power of particular images, students feel better able to conceive of their own subjective, non-illustrational imagery as it relates to factual description: i.e., the imagination of the artist articulated through the rationally-observed details, though as the disguised true subject of the imagery always distinct from the imagery. If subjectivity, one's own or another's, the separation from mere "fact" or illustration, is the ground for aesthetic experience and knowledge, it is important that students learn to discern the subjective essence and the personal statement in imagery,

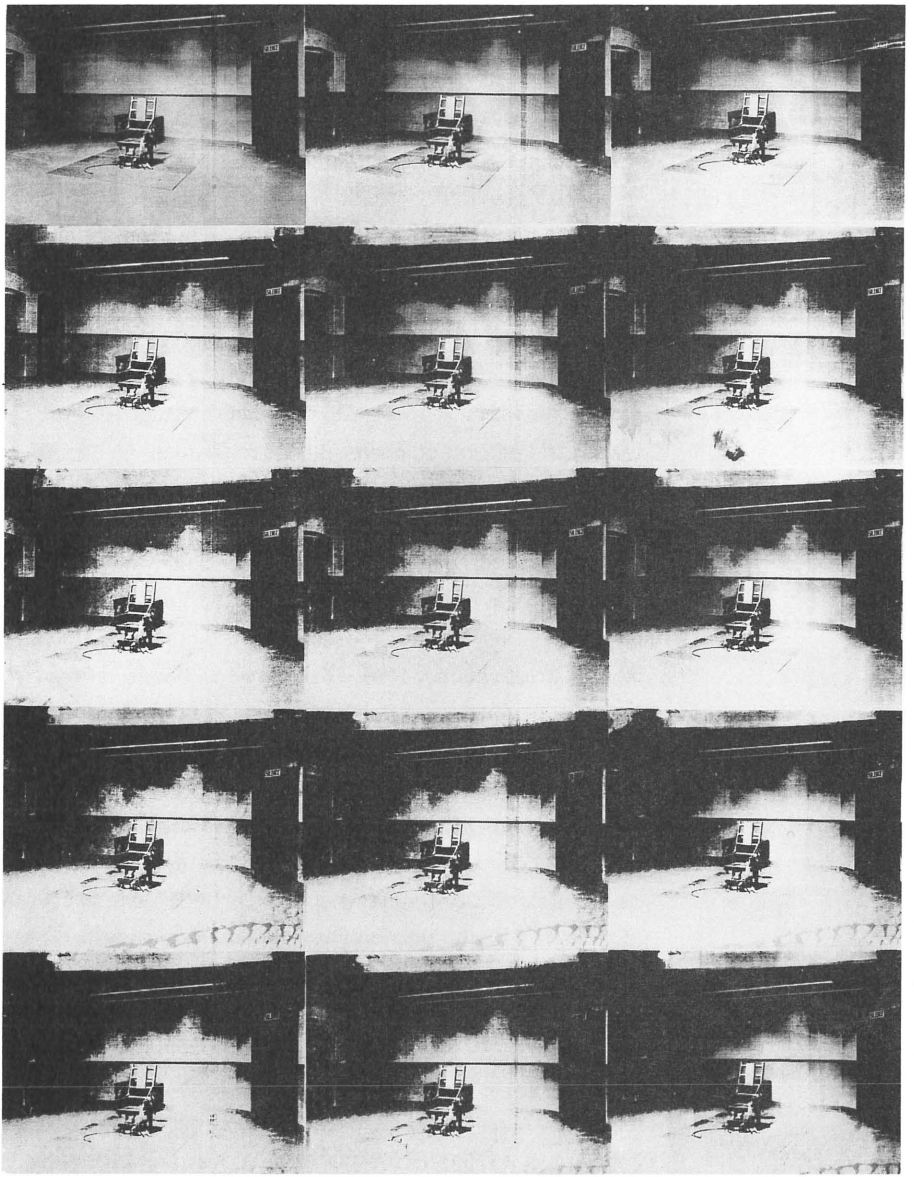

Figure 1
Andy Warhol's *Orange Disaster, No. 5.*, 1963, acrylic and silkscreen enamel on canvas, Solomon R. Guggenheim Museum, New York.

whether it is surreal, impressionistic or photorealistic. Describing a friend in his poem, "Her Right Eye Catches the Lavender," the poet Gerald Stern says, "Her eye is part of her mind." The rediscovery for the young writer of his or her "innocent eye," as the result of a close examination of visual imagery, often inspires astonishingly moving writing.

The interplay between illustrative objectivity and artistic expression is nearly the same in the imagery of poetry and in the imagery of painting. Whereas the painter personalizes the image by painterly brush strokes, unexpected color combinations, shadow and form, the poet uses tone, timing, syntactic surprise and diction to remove the image from the realm of description and into the realm of art. It seems to me more useful to teach students to be moved by imagery through examples of visual art first for two reasons. First, the experience is more powerful, more immediate. In a culture where one's eye is used to saturation, the student is prepared to be affected when the images of visual art stand wordlessly before us. Second, each explanation, response or simulacra seems at least plausible within the context of a creative writing workshop. The ambiguity of the image is a function of the silence around it. When the nonverbal power of the image in paint is translated into their own words (seeming an attribute of their own imaginations), apprentice writers feel more capable of expressing the interior life through a personalized imagery.

I have often been surprised by the preference many students seem to have in their writing for dry, colorless abstraction or for the baldest expositions of plot, when like many people around us who seem interesting at first glance, they express their recessed, interior selves well when it comes to dress, hair style, personal eccentricities of speech and gesture and so on. In life they show, but on the page they tell, avoiding, possibly even fearing, the textured opacity and ambiguity of linguistic imagery.

This seems unfortunate when one notices that the landscape around us all is, today, hyperaestheticized, that it vibrates with imagery. Most of the objects of the material world seem to have been created by or at least filtered through a human intelligence. I would even claim that for most college-going twenty-year-olds,

Figure 2
Ralph Goings'
Schoharie Diner,
1979, oil on
canvas.

Permission of O.K. Harris Works of Art, New York.

the sublimity of a pasture of holsteins has to do with their favorite Far Side comic.

Perhaps some creative writing students feel what many of us feel, overloaded with emotionally meaningless imagery. If the criterion for a good poem is that it contains stunning images, the world is already a huge poem or painting, one created for us by an army of strangers who are at worst disrespectful of our vulnerability to their influence and at best uninterested in our sense of our selves. Imagery seems cheap, easy; the latest Michael Jackson video seems visionary enough, and it outdoes *Ash Wednesday* when it comes to the life of the third eye. But the problem is that the writer of any age, at any time, feels impoverished of an emotionally meaningful subjective aesthetic center. There is too little depth beyond the surface, whether one looks inward to see the depth, or outward. Where, in all this glitter, is the real beauty? Where is the experience of being deeply moved?

I feel fairly certain that I learned more about poetry writing as an undergraduate, from looking closely at visual art than from reading poetry. At first, that is. I mean the absolutism of that claim. I finally learned to love poetry, prepared to respond to its tones and images, by having first responded deeply to visual art. The modern British painter Francis Bacon, for example, overtook my imagination with his canvases of violent, beautiful color, his human forms twisted in an urbane spiritual agony. A month or so later, when I discovered T.S. Eliot's poetry, I had no trouble hearing the apocalypse and the sexual dysfunction simultaneously, and all the footnotes and analyses seemed of secondary interest to the screen in my mind the images gave birth to.

Later, I read Eliot's words about meaning being like the bone the burglar throws out to the dog, and I figured out that Bacon was painting within the high Modernist/Romantic tradition. I had already begun to write my poems. They bore the marks of their fathers and they seemed easy to write: a highly creative part of my consciousness had been summoned into action (belatedly, yes) by Modernism in general, but first of all and most specially, by the wordless images of Francis Bacon. It was as if the art had

helped me to see something in the world that needed articulation. And I could use, in poetry, the imagistic language of the painter without feeling as if I were merely stealing or imitating. It is not surprising that these early poems of mine were full of images. I believed that the image was a profound moment of contact with the world. As Bacon says in an interview, "I think that no matter how far you deviate from it, you need the discipline of the subject. You need the pulsation of the image, the force of the image to go beyond decoration. And perhaps I'm peculiar, but I ask from painting something more than decoration." (p. 82)

Ultimately, the value of using visual art in the creative writing workshop is that it frees students, for the moment, from the requirement to portray their imaginative experience in language, a requirement which can be inhibiting to the typical undergraduate who does not read for pleasure enough to emotionally connect language with creative play. Even given the hyperaestheticized, explosively visual surface of life today, and the way in which the flood of drops of information a developing mind is forced to swallow can drown out that individual's articulation, it may still be possible to draw out from students through a combination of creative writing and an appreciation for visual art, the private, interior imagination.

Here are some examples of paintings I have used successfully in poetry workshops to engender discussions of imagery.

Andy Warhol's work, though it may seem trite and dated to some of us now, is good to use. His bold, dramatic, darkly funny images and his fine sense of ironic counterpoint are easily appreciated by students. Best of all, his images can be seen by the entire class from the front of the room. His Electric Chair silkscreens provide an excellent opportunity to show the suggestiveness of color. In the Electric Chair series, the same image of an electric chair is repeated on several canvases. The number of times the chair is repeated on each canvas, the formal divisions of each canvas into planes and the color wash behind the chair on each canvas vary. Each piece expresses a different emotional essence (see *figure 1*).

If one reads the large blue canvas divided into two panels, from left to right, a plot-like relationship is implied between the instrument of death, sunk in its blue shadows in the first panel, and a kind of vision of heaven, a pure blue rectangle, following it. This is a different statement from that made by the canvas on which the chair is repeated twelve times, in four even lines, stained with a luscious almost morbidly attractive lavender. In discussing these, students have the opportunity to articulate the various complex associations colors enact in us.

Students love looking through my book of reproductions of Ralph Goings' photorealist oils. What seems communicated most immediately to them is, ironically, the personality of the artist. The sly, but large-spirited, humor in his nearly completely objective renderings of the complex expression on waitresses' faces, of Rose Parade clown floats and of plateglass windows in doughnut shops reflecting supermarket plateglass windows, have inspired fine tragicomic writing.

Artistic selection of details as a method of expressing an emotional essence can be discussed by way of Goings' painting of a working woman in her polyester green uniform at an otherwise empty coffee shop table (see *figure 2*). Students tend to laugh at the image first: the mundane pathos of the woman's implied existence seems hardly worthy of an artist's attention. The monograph from which I take this example contains an interview with Goings; in it, he tells us that the snapshot from which he designed this canvas contained another woman, a friend, sitting across from his subject. He removed her from his painting. What was he trying to emphasize about the life of his subject? Once students have noticed the sun-drenched fern on the window sill, which is separated from the woman in her green uniform by a white curtain, the solitude and spiritual heaviness of this woman have affected them. The example of selection which has been mentioned can be used to begin a discussion answering the common workshop complaint, "but it really happened that way!"

Finally, Larry Rivers, in his revisionist version of Washington crossing the Delaware, raises the issue of content, the real criteria for beauty. Compared to the famous, heroic, pretentious tableaux of Delacroix, Rivers much more accurately portrays the awkwardness, alienation and chaos of the historic night — a night richer in real human drama than Delacroix thought worthy of art. More than any painting with overtly shocking subject matter, this painting confronts the simple expectations for beauty held by some students. The ungainly figure at the center of Rivers' painting seems more an anti-heroic and believeable George Washington and the implication is that his real victory, out there that night in the avocado-green murk, was to have survived. Following this discussion, students might feel more comfortable bringing the actual murky and unpretty textures of their lives into their writing, not attempting to transcend the reality of the times, of their lives, by tranferring or heightening their perceptions into abstractions.

Following a close examination of visual art works, students inevitably feel more comfortable showing the reader their worlds as their worlds are shown to them. There is a kind of fundamental guilelessness about the visual image, a higher innocence which brings out a similar impulse in students. Beyond the will of the beginning writer, the complexity of the person in real time shows itself, in subtle and particular ways, in the complexity of that person's recreations of retinal experience.

I would like to quote the modern British painter Francis Bacon at some length. He is discussing his favorite painter, Velasquez:

"It's a very, very extraordinary thing that he has been able to keep it so near to what we call illustration and at the same time to unlock the greatest and deepest things that man can feel, Which makes him such an amazingly mysterious painter . . . I think that Velasquez believed he was recording certain people at that time; but a really good artist today would be forced to make a game of the same situation. He knows that the recording can be done by film, so that that side of his activity has been taken over by something else and all that he is involved with is making the sensibility open up through the image. Also, I think

that man now realizes that he is an accident, that he is a completely futile being, that he has to play out the game without reason. And what is fascinating now is that it's going to become much more difficult for the artist, because he must really deepen the game to be any good at all."

Bacon's sense of the futility of our lives might seem a call to action to some students. As John Asbery says in his poem, "Introduction":

> **Just living won't do. I have a theory**
> **About masterpieces, how to make them**
> **At very little expense, and they're every**
> **Bit as good as the others. You can**
> **Use the same materials of the dream, at last.**

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A new taxonomy is proposed for classifying the graphic cues commonly used in visually informative text. Previous approaches have focused on typographic and spatial cueing but have not formalized the concept which I call mark cueing. Mark cues are lines such as dividers, guidelines and network links and visual tags such as bullets and enumerators. Spatial and mark cueing are subsumed under a new concept called diagraphic cueing. Together, diagraphic and typographic cueing make up the broader concept of graphic cueing. The various forms of graphic cues are surveyed, with a brief look at products such as vertical lists, tables, network diagrams and text labels.

Charles T. Gilreath

Graphic Cueing of Text: The Typographic and Diagraphic Dimensions

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Introduction

A new theoretical schema is proposed for classifying the myriad of graphic cues available to modern writers of visually informative text. A comprehensive taxonomy of graphic cues must cover three basic forms: typographic cueing, spatial cueing and mark cueing. Previous approaches have focused on typographic and spatial cueing (Spencer, Reynolds and Coe, 1975; Foster, 1979; Hartley, 1980; Bernhardt, 1986). But none have formalized the concept of mark cueing. Mark cues are lines (guides, links and dividers) and visual tags (bullets and enumerators). While these cues are frequently discussed in the literature, I have not found them to be formally named and conceptualized within a comprehensive schema of graphic cues. From the outset, let me clarify that no new graphic cues are introduced here. Instead, the novelty lies in the schema organization and subsequently in several resulting concepts and terms. This can be seen as a new ensemble of old cues.

Structure. This paper has three main parts. Following the introduction is a background section covering certain basic issues. The second part covers the schema of graphic cues, and the third briefly surveys the products of such cueing, namely: graphic typography, diagraphic displays and text labels.

Terminology. To clarify some of my terminology, *schema* has the same meaning as classification system, taxonomy, typology, etc. *Graphic cues* mean textual graphic cues — which mark, organize or modify text. Spatial and mark cues are also used in nontextual displays (maps, drawings, arrays of non-verbal images, etc.), but these applications are not considered here. Although punctuation marks have the form and function of mark cues, their use in ordinary prose is not considered here as graphic cueing. Several new terms are introduced. *Diagraphic* and *monographic* are established words but are given new meanings here and are the basis for a number of derivative terms. Also, one neologism is introduced: *graffix*. The meanings are explained shortly.

The Graphic Design of Text. As a subject specialty, *text design* has been called technology of text (Jonassen, 1982, 1985),

text engineering (Carr, 1986, 29:76), and is also widely known as principles of typography (Berger, 1989, 178; Berryman, 1979, 22; Crystal, 1987, 190). *Text architecture* is also suitable because architecture implies the creative fusion of aesthetics and functionality (user-friendliness) that is characteristic of well-designed buildings and text alike. Simpson and Casey (1988, 171) use the term *documentation architecture* in the same sense.

Let us distinguish between two aspects of text design. I will call them mechanical and graphic. Mechanical design involves such attributes as style, size and weight of the main typeface, length and spacing of printing lines, number of columns on a page, size of margins, size of page, etc. In contrast, graphic design involves graphic cueing as discussed in this paper. Issues of mechanical design are not addressed here. As a note, mechanical and graphic design (*as in figure 2*) are sometimes one and the same, although generally they are distinct.

Also, this paper does not (with a few exceptions) address ergonomic issues such as: 1) which graphic cues are appropriate for which text situations, reading strategies, document types, etc.; 2) relative visibility (salience) and legibility of the various cues; 3) over-cueing and under-cueing. These are important issues to be clarified in future research but are beyond the scope of this paper. Such research will certainly need a comprehensive schema of the kind, if not exact form, that is presented here.

Background

MONOGRAPHIC TEXT

Monographic is an established adjective meaning: related to a monograph (a learned treatise). In contrast, the term has a new sense here. Because of its *-graphic* (one might say *-nographic*) root, *monographic* seems an appropriate name for this concept and is selected from a number of alternatives, including: *monotonic, homogeneous, pure, uniform, unidimensional* and *undifferentiated*. In this context, monographic is a descriptor for text, typography, or layouts which lack graphic cues. Here are some definitions:

monographic text: text with no graphic cues. Syn: straight text continuous text, ordinary text, pure text, etc.

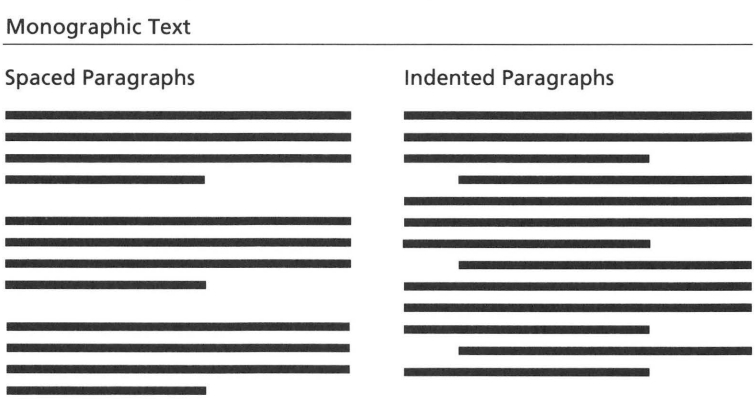
monographic typography: typography that is unchanging in style, size, weight and thus not highlighted for cueing purposes.

monographic layout: text layout that is linear, horizontal and has no extra spacing between words or lines.

Extra spacing is anything other than the normal spacing used in the mechanical design of the text. Thus, blank lines between paragraphs are not extra spacing if all paragraphs have them. Exceptions to extra spacing are paragraph indentations and paragraph endings that fall short of the right margin — as most endings do. In other words a text block can have these exceptions and still have a monographic layout.

Figure 1 shows the two most common formats for monographic text. Sometimes the two are combined.

Figure 1
Monographic Layouts



Being monographic per se does not mean that text is poorly designed, for many texts (fictional literature and certain types of nonfiction) are well-designed without graphic cues. Thus, these designators are not pejorative per se.

Graphic Text

The term *graphic text* is short for graphically cued text. Bernhardt (1986) calls the same concept *visually informative text*; it is also called *visually cued, visually coded* and *visually enhanced text*. Since graphic cueing can have so many forms, with each applied in varying degrees, it is difficult to quantify the extent to which text is graphically cued. However, using a rough scale, we might say that graphic text ranges in a continuum from barely graphic (or largely monographic) to fairly graphic to highly graphic. Some exemplary texts that are highly graphic are Hodges and Whitten (1990), Baecker and Marcus (1990, Color Plates A & B) and Horn (1989).

Figure 2

The Text-Graphic Duality of Written Language. As a practical matter, the distinction between text and graphics is fairly clear. Written words are textual, whereas non-verbal markings and space itself are graphic. The duality is clear in the familiar sign shown in figure 2.

The Graphic Nature of Monographic Text. There is a technical problem with this duality which should be mentioned. In final analysis, text is really just a special form of graphics, for text is inscribed on graphic space, it uses graphic punctuation marks and the basic units of shape of alphabetic characters are graphic marks known as graphemes. Thus, the ultimate graphic nature of text explains why text is amenable to graphic cueing. In final analysis, it is really graphics on graphics. Still, the practical distinction between graphic images and text images is useful and will be largely maintained in this paper.

Cueing in General. Cueing is a broad concept, covering visual cues (body language, graphic cues, traffic lights, etc.), auditory cues (phone ringing, tone of voice, etc.) and a whole range of othersensory and cognitive cues. In text design there are two basic types of cues available to the writer: verbal and graphic. This paper is about the latter, but let us briefly consider the former.

Verbal versus Graphic Cueing. Monographic text is straight prose with no graphic cues (word spacing, punctuation marks and paragraph cues excepted). Thus, all cueing in monographic text is verbal. Expressions such as *first*, *next*, *finally* or *this section focuses on* ... are verbal cues about the text structure. (See Meyer,1985 for an elaboration on this form of signaling.) In contrast, graphic (visual) cues complement and often replace verbal cueing. (See Bernhardt,1986,76; Hartley, 1985, 51.) For example, adverbs used in verbal enumerations (first, second, third) may be replaced by numbers, bullets or other graphic cues.

Value of Graphic Cueing. Although our focus is on the schema of graphic cues, a few general comments are appropriate regarding the value of graphic cueing. In a word, the main advantage is readability. There are many studies showing that prudent use of graphic cues can greatly improve performance for virtually all reading strategies, ranging from careful serial reading to searching, surveying, browsing, skimming and other forms of selective reading. (Some works which treat one or more of these reading strategies are Dooling and Lachman, 1971; Wright and Reid, 1973; Wright,1977; Frase and Schwartz, 1979; Hartley and Trueman, 1983; Foster, 1979; Garofalo,1988; Simpson and Casey, 1988; Horn, 1989; Bever, Jandreau, Burwell, Kaplan, and Zaenen, 1991).

Two other advantages are: creative expression and compositional quality. Both prose writing and graphic cueing are creative activities, so graphic cueing gives writers an additional opportunity to be creative. Also, it is argued that graphic cueing (especially frequent labeling) tends to improve compositional qualities such as completeness and coherence. (See Horn, 1974, 5; Bernhardt, 1986, 67.) I will not elaborate on this point other than to note this to be an interesting issue for further research. Further credit to graphic cueing lies in the fact that costly printed advertisements are seldom monographic and usually highly graphic in style. That cost-conscious advertisers regard graphic cues as worth their expense is strong testimony for graphic text.

The Schema of Graphic Cues

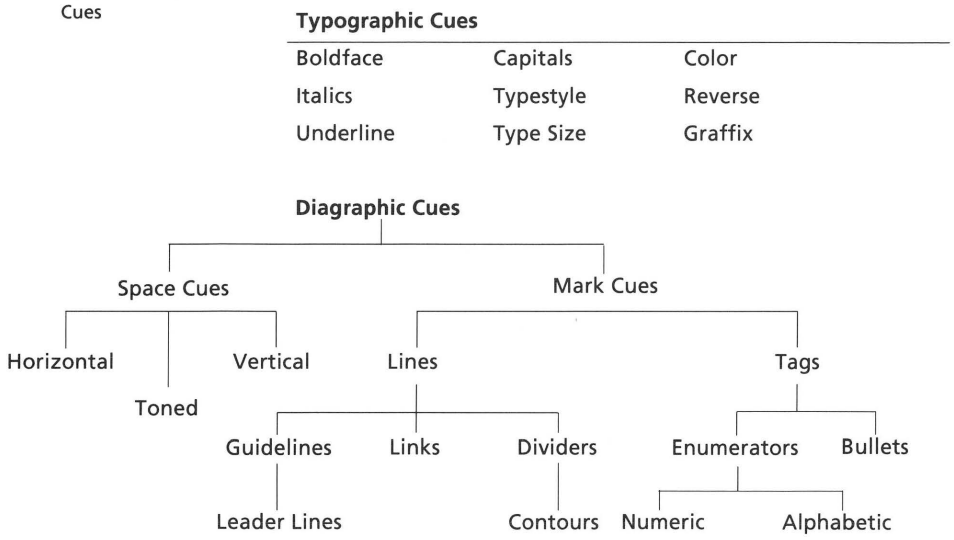
Figure 3 summarizes the basic types of graphic cues. Since this schema is the central postulation of this paper, a few comments are appropriate on its taxonomic merits. In evaluating any such schema there are several key parameters to consider.

Schema-Evaluating Criteria

- *Comprehensiveness:* are there any common or important graphic cues not covered by the schema?
- *Economy:* how many taxons are in the schema?
- *Depth / Precision:* how precise are the narrowest taxons?
- *Disjunctiveness:* to what extent are parallel taxons mutually exclusive (disjunctive)?
- *Hospitality*: to what extent are new cues (anomalies) accommodated without ad hoc categories or else major restructuring of the system?
- *Nomenclature*: are the taxon names concise, descriptive and uniform in series? [See also Gilreath (1992) for other term-evaluating criteria.]
- *Suitability for Purpose:* is the schema suitable for its purpose or purposes?

As a note, the purposes of this schema are manifold. In very general terms, such schemas help writers, text designers, students, teachers and researchers to cognitively organize, define, name, talk about, recognize, investigate and more effectively use graphic cues. I believe the schema warrants acceptable marks on each account, but this is an issue best settled by comparing the schema with alternative formulations. I will not make such comparison here other than to repeat my claim that previous formulations have not (among other differences) formally recognized mark cueing as a distinct and briefly named concept.

Figure 3
Types of Graphic Cues



TYPOGRAPHIC CUES

The primary distinction in this schema is between typographic and diagraphic cues. These are disjunctive in the sense that typographic cues can be used with or without diagraphic cues and vice versa. As Hartley (1980) points out, the term *typographic cue* has two meanings. Some authors (e.g., Frase and Schwartz, 1979) use the term broadly to also cover spatial cues. Others (Wright, 1977; Hartley, 1980) treat typographic and spatial cues as distinct. I take the latter position in this paper. Nine basic forms of typographic cues are cited in table 1. Actually underlines (3) are a type of graffix (9) but are treated separately here as a special case. The items in the attribute column are the intrinsic features (Twyman, 1982, 1986) which are treated or changed for each cue.

Table 1
Attributes
Affected in Typographic
Cueing

Cue	Attribute	Example
1. Boldface	weight	**boldface**
2. Italics	slant	*italics*
3. Underline	marking	underline
4. Capitals	case	UPPERCASE
5. Typestyle	style	times roman
6. Type Size	size	smaller
7. Color	color	**black**
8. Reverse	background	reversing
9. Graffix	marking	[graffix]

Highlighting is defined broadly here and used as a shorter synonym for *typographic cueing*. That includes any means of forming words or passages so they visually contrast with surrounding text. Most highlighting involves short segments of text, and these are often individual words embedded in paragraphs. Occasionally whole blocks of text, such as footnotes or extended quotations, are uniformly highlighted for contrast with surrounding text.

1. Boldface is an increase in weight of a typeface. Some typographers distinguish between boldface, medium-face, and lightface weights, and there are even finer scales than that. Here I will use just a two grade scale — boldface and normal weight. Boldfacing is available on most modern printers and even on typewriters by double-striking of keys. Because of its high visibility, boldface is widely used for text labels (notably headings), emphasis, warnings, etc.

2. Italics is a slanted variation of a typeface and is contrasted with the roman (upright) form. Italics lacks the high visibility of boldface but is suitable in common uses like cueing literal terms, foreign words, publication titles, emphasis, etc.

3. Underlines are lines drawn parallel with and below words for typographic cueing purposes. The common form of underline is a single unbroken line, although variations may include lines which are broken, dotted, double, boldfaced, wavy, etc. Underlining is a highly effective highlighting device although in modern text it is less common than italics. Underlines

are actually forms of graffixes (see cue 8 below), but are treated here as a separate category because of their relative visibility and universal availability to writers.

4. Capitals are the typographic cue of using only uppercase letters. Capitals are a fairly visible cue and commonly used in certain headings and also in acronyms like UNESCO, FORTRAN, COBOL, BASIC.

5. Typestyle is the basic shape of a family of typographic characters. A given typestyle (e.g., helvetica) will have subsets of different sizes, with each typically having normal and boldface versions as well as roman and italic versions. A particular subset —, e.g., helvetica 10 pt. bold — is commonly known as a font. Although typestyles can be changed within passages, it is more common for different typestyles to be used for certain headings or to cue whole passages, such as extended verbatim quotations or other categories of information.

6. Type Size. Size of typeface is commonly used to cue different levels of headings and to cue whole passages such as footnotes and quotations. Size changing is also illustrated in the use of small capitals for words like FORTRAN, PROLOG and BASIC which may be embedded in a passage.

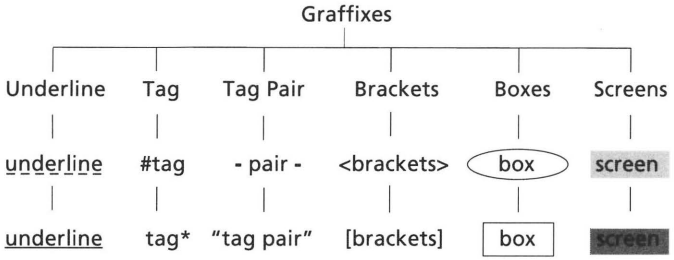
7. Color is an excellent graphic cue — useful not just in typographic cueing, but all forms of diagraphic marking and toning. Unfortunately, polychrome text is more expensive to print than monochrome (usually black), so color cueing is often impractical. As color becomes more available in desktop applications and as the price of color xerography and printing goes down, one might expect that printed text of the future will be increasingly colored.

8. Reverse printing — reversing — is a change in the image-background polarity of a typeface. Like boldface this cue is highly visible, although it is not as widely available in desktop systems.

9. Graffixes are marks attached to words for highlighting purposes. "Graffix" is a blend of the words *graphic affix*, which are quite descriptive of this concept. In lexical morphology an *affix* is a modifying form that is attached to a root; the three basic types are the prefix, infix and suffix. In the analogy, the

lexical affix is attached to and semantically modifies the root, just as the graphic affix is attached to and visually modifies the printed word. Figure 4 cites and exemplifies six main types of graffixes.

Figure 4
Types of Graffixes



In modern text the underline, the tag pair (especially quotation marks) and brackets are more common than the single tag, the box and the screen. We have already considered underlining as a special case of affixing, so let us briefly cover the other types.

Single tags may be placed on either side of the word, with the asterisk and crosshatch being common devices for this function. Tag pairs may be double or single quotation marks, hyphens and other suitable boundary-marking characters. The common shapes of brackets are straight, curved, angle, and brace. Boxes are commonly rectangles but may also be circles, ovals, triangles, etc. Screens (for want of a better word) are background tones used for highlighting. In monochrome text, screens are gray regions which mark words in a way similar (in form but not intensity) to the yellow fluorescent screens made with highlighting markers.

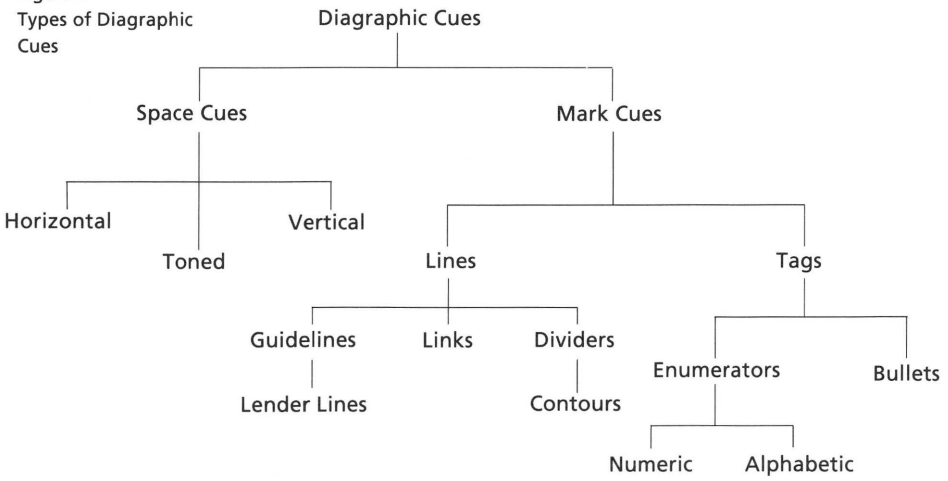
In concluding this survey of typographic cues, we should note that these cues can be used in combination. In fact it is possible to incorporate all nine cues in a single highlighted word. Also, given the variety of typefaces available today, it is possible there are some forms not covered by this taxonomy. Insofar as anomalies exist, there is the need to refine this schema. Let us now turn to the other dimension of graphic cueing which I call the *diagraphic dimension*.

DIAGRAPHIC CUEING

The word *diagraphic* is a technical term in geology (Derlich, 1986). Also, Wildbur (1989, 143) cites a book on diagrammatic communication titled *Diagraphics* (1986). Thus, the term is not new, although I think it has not been used in the sense which I propose. In fact I have found no (concise) term used for this concept.

Figure 5 (*a segment of figure 3*) shows the two basic types of diagraphic cues — space cues and mark cues.

Figure 5
Types of Diagraphic Cues



Space Cues. In dealing with space cues we need to distinguish between two types of lines: diagraphic and printing. Diagraphic lines are linear marks, whereas printing lines are not graphic marks but horizontal sectors that may be blank or have writing. It is the printing line that is intended in the following discussion of space cues.

Since the printed page is two dimensional, spatial cues can be made in two basic directions: vertical and horizontal. (See also Wright and Reid, 1973; Hartley, 1980, 1984.) Vertical cues are blank lines in the display and the relative position of lines over or under each other. Horizontal cues are any spaces on a line other than the single space between words in a monographic

layout. This includes left-space (formed by indenting), right-space (formed by ending a line short of the right margin) and interior space between text segments on a line. Ex-denting is also a horizontal cue. Related to these is the relative position of a segment (e.g., a heading) on a line.

Although vertical cues can be used without horizontal cues, and vice versa, the two are often used together. Figure 6 illustrates horizontal and vertical spaces, the combination of which is called a grid.

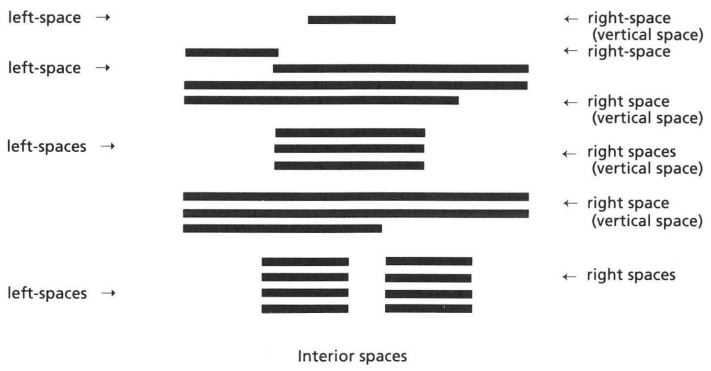
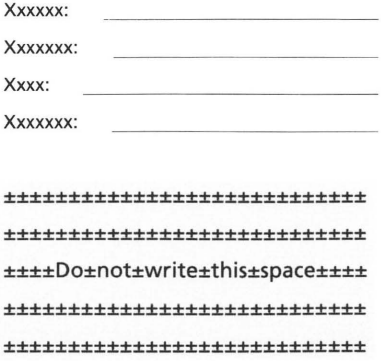


Figure 6
Horizontal and Vertical Space Cues

Space toning is classified here as a form of space cueing, although it involves marking of space and thus could be viewed as a form of mark cueing as well. Since most printed text is black type on a white background, the space we normally see is white space. When space is toned with color, shades of gray, faint dots or other textured patterns, the result is toned space. Some familiar examples are chessboards and maps which tone different regions with different colors. Diagraphic cueing with toned space is similar to typographic cueing with screens. But unlike screens, toned space is expansive and not confined to the immediate background of a highlighted word *(see figure 7)*.

Figure 7
Toned



A related form of spatial cueing not shown in figure 5 might be called relative spatial cueing. Its facets are: the distance between two items of text and their relative positions. Further discussion of spatial cueing is found in the next section under the heading of *Diagraphic Displays*.

Mark Cues. Diagraphic marks are graphic signs which complement diagraphic layouts by helping to visually organize items of text. They are closely related to punctuation marks in both form and function. Two basic types of diagraphic marks — lines and tags — are detailed below. Occasionally these marks are useful in monographic layouts, but generally they complement space cues in diagraphic layouts. Just as mark cueing is often used with spatial cueing, so too are tags and lines often used together.

Diagraphic Lines. Three types of lines are commonly used to organize diagraphic text: guidelines, network links and dividers. Underlines are classified here as highlighting marks not diagraphic lines, just as screen graffixes are considered as highlighters and not toned diagraphic spaces.

A guideline serves to visually align text or to guide writing. A leader line is a type of guideline which aligns entries that are spaced apart but usually on the same printing line. Common examples are the dotted lines which align headings with page numbers in many tables of contents. Guidelines may also function as dividers. These types are illustrated in figures 8, 9 and 10.

Figure 8
Guide and Leader Lines

Guidelines		Leader Lines
Name:	_____	Chapter # ..... p.#
Address:	_____	Chapter # - - - - - - - - p.#
	_____	Chapter # . . . . . .p.#
Phone:	_____	Chapter # _____p.#

Figure 9
Dividers and Contours

A **DIVIDER** is a line which divides graphic (or typographic) space. Unlike links, which are connectors, dividers are boundaries and separators. They may have any shape and position, but most often in graphic text they are straight horizontal lines.

Dividers can also take the form of circumscriptions or **CONTOURS** which enclose a graphic space, as exemplified here and also by window contours on computer screens. Contours can have any shape but most often in graphic text they are rectangular.

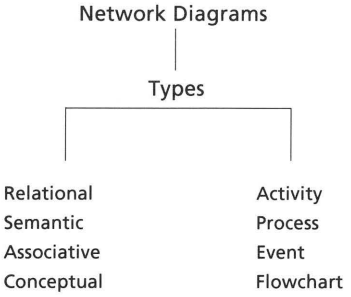
Figure 10
Nested Contours in a Table

	A	B	C	D
1	txt	txt	txt	txt
2	txt	txt	txt	txt
3	txt	txt	txt	txt

Grid lines, as shown in figure 10, are interwoven lines which serve as both guidelines and dividers. This faculty that a graphic mark may serve several functions at once is common in diagraphic displays.

A link is a line which connects nodes in a network display. Unlike dividers, which define and separate adjacent blocks of text, links serve to connect and relate blocks which may not be adjacent. Figure 11 is a relational network with all diagraphic lines being links.

Figure 11
Links in a Relational Network Diagram



Indexical links (a.k.a. pointers) are a special case. They clearly have the link function but they usually work by pointing at a distance rather than extending all the way to their target node. Indexicals may be as short as one character or may extend over some distance. They commonly appear as arrow-like marks but occasionally as pointing-hand icons.

Diagraphic Tags. A diagraphic tag is a brief symbol (often a single character) used to label and visually align or organize entries in diagraphic text. In the literature I have not seen "tag" (or any other concise term) used for this concept but find it suitable here. The two basic types of tags are bullets and enumerators.

Bullets, sometimes known as dots, spots, points, etc., are brief marks of varying shapes, such as the asterisk and dash on the ordinary keyboard and round, square, diamond, and triangular dots in more advanced systems. Other forms which bullets sometimes take are small icons and special characters such as $, #, @. A special case is the stop mark sometimes used to signal the end of an article.

Enumerators are diagraphic tags having the form of either an alphabetic character (A,B,C) or (most commonly) a numeral (1,2,3). Enumerators sometimes have several characters and

mixed ones at that — for example: 10, 1-A, 1.3.2, B-2-C. Tag enumerators, as described here, should not be confused with verbal enumerators (like first, second, third, etc.).

There is a tag-like symbol which should be noted here. Sometimes icons and other small figures are used for illustration or text-labeling — for example a scissors icon cueing a dotted guideline for cutting or a telephone icon cueing a phone number. These might be called *icons in text* rather than diagraphic tags, although the distinction is not always clear.

This concludes our survey of the typographic and diagraphic devices useful in graphic cueing of text. In the final section we look briefly at three categories of text products which result from this cueing.

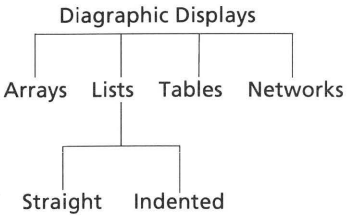
Products of Graphic Cueing

A distinction is made between products of graphic cueing and the basic cues themselves. Three types of products are covered below: graphic typography, diagraphic displays and text labels.

Graphic typography is the product of typographic cueing, just as monographic typography is the product of no typographic cueing. Graphic typography can be used in both monographic and diagraphic layouts.

Diagraphic displays are the products of diagraphic cueing. They may be typographically cued or not. Four basic types are shown in figure 12.

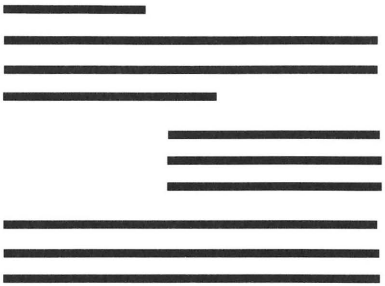
Figure 12
Types of Diagraphic Displays



These types may exist in pure form, but sometimes they are mixed, in which a predominant form will also have segments of other forms. For example figure 3 is a network and also contains a list.

Diagraphic arrays are displays of spatially cued blocks which themselves may be monographic in layout. The simplest form is a text block labeled with a detached heading. When headings are detached as opposed to run-on, the spatial cue is the extra white space surrounding the heading. Figure 13 shows a typical form.

Figure 13
Diagraphic Array



Not included as diagraphic arrays are text laid out in multiple columns on a page and runaround text. This form runs around "obstacles" such as windows or illustrations (White, 1988, 86) and serves a mechanical and sometimes aesthetic function but not a semantic one. The term *meaningful* (as in meaningful spacing) is a good descriptor for it points to the semantic function of spatial cueing which is missing in runaround forms. This designation follows Green and Payne (1982, 393) and Frase and Schwartz (1979), who use the term *meaningful* (in "meaningful indentation") in the same sense. Lists are vertical displays of text items. Lists are either straight or indented (i.e., outlines). Here, indented refers to indentation within the list and not to any indented position of the list itself. Abstract examples of each are shown in figure 14.

Figure 14
Straight and Indented Lists

Lists

Straight

Xxxxxxxx.
Xxxxxxxx.
Xxxxxxxx.
Xxxxxxxx.
Xxxxxxxx.
Xxxxxxxx.

Indented

Xxxxxxxx.
Xxxxxxxx.
Xxxxxxxx.
Xxxxxxxx.
Xxxxxxxx.
Xxxxxxxx.

Figure 15
Unmarked and Toned Tables

Unmarked Table

	XXXX	XXXX	XXXX	XXXX
Xxxxx	xxxx	xxxx	xxxx	xxxx
Xxxxx	xxxx	xxxx	xxxx	xxxx
Xxxxx	xxxx	xxxx	xxxx	xxxx
Xxxxx	xxxx	xxxx	xxxx	xxxx

Toned Table

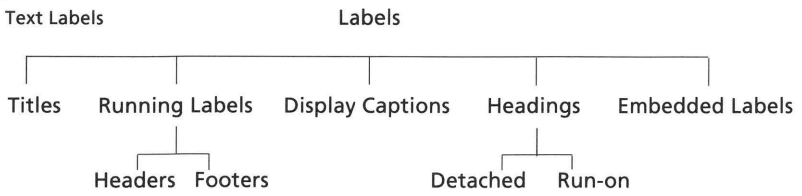
	XXXX	XXXX	XXXX	XXXX
Xxxxx	xxxx	xxxx	xxxx	xxxx
Xxxxx	xxxx	xxxx	xxxx	xxxx
Xxxxx	xxxx	xxxx	xxxx	xxxx
Xxxxx	xxxx	xxxx	xxxx	xxxx

Diagraphic tables are complex text displays which correlate information horizontally in rows and vertically in columns. Although guide/divider lines or else space tones are often used to visually clarify the organization, such cues are not always necessary. Figure 15 shows two forms.

Network diagrams have links as their distinctive feature and are amply illustrated throughout this paper. See also figure 11 for basic types of networks.

Text labels are prominently visible terms which describe the information contents of adjacent text. Like any type of label, text labels allow the user to know the contents without direct examination (i.e., careful reading). Thus, labels assist the reader in searching, surveying, scanning and other forms of selective reading. There is a case to made that well-labeled text facilitates serial reading as well. (See also Reid and Wright, 1973; Wright, 1977; Hartley and Trueman, 1983; Simpson and Casey, 1988 and Horn, 1989.) Figure 16 shows the most common types of verbal labels. Text labels can also be nonverbal (e.g., color codes and icons) but these are not considered here.

Figure 16
Types of Text Labels



The *title* is the principal label of a document. *Running labels* are the headers located at the top of each printed page or footers located at the bottom. *Display captions* are labels for figures such as statistical charts, maps, line drawings, tables and network diagrams. Captions can be considered as headings when they occupy a heading position (as in the above display). But unlike headings, captions may be placed at the bottom or other non-heading positions relative to the display.

Headings are labels located at the head or beginning of a block. A detached heading is located either on a separate line above the text or else in the left margin beside the text (and sometimes both). A run-on heading is placed at the beginning of the text block (usually a paragraph) and occupies the position normally taken by the first word or words in the block. These are illustrated in figure 17.

Figure 17
Types of Headings by Location

Embedded labels are highly visible key terms located within a paragraph. These labels may be located anywhere in the paragraph and a paragraph (like this one) may have more than one. In this paper the italic definienda (terms being defined) are intended to serve as embedded labels. Note that key words do not have to be definienda but merely terms which are descriptive of nearby text. The requirement that labels be highly visible (salient) raises the issue of comparing and rating the various typographic cues on this quality. Clearly, some cues are more visible than others. At the high end I would place boldfacing, reversing, larger type size, and yellow fluorescent screens. As for italics, it is debatable whether this cue has the visual prominence necessary for effective embedded labeling.

This concludes our look at three main types of products of graphic cueing: graphic typography, diagraphic displays and text labels. The first two can exist independently of each other but generally are found together. The third, text labels, nearly always depends upon typographic cueing and frequently on spatial cueing as well.

Summary

In this paper we have surveyed a new theoretical schema covering the various graphic cues available to modern text designers. We have focused on printed text, but the principles apply largely to electronic and other media as well. As with any such postulation, this schema can be judged by the extent to which it helps us to cognitively organize, define, name, talk about, recognize and more effectively use the various elements that are covered. These are the typographic and diagraphic cues at our disposal for graphically cueing of text.

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We examined the impact on proof-reading accuracy of setting text in (monospaced) typewriter faces and (proportionally-spaced) typefaces, and found no significant differences. However when we introduced a third condition (irregularly-spaced typeface), proof-reading suffered, suggesting the importance of a good match between character shape and horizontal spacing. There was a subsidiary finding that subjects marked more false positives (that is, suggested that there were errors in texts, when in fact there were not) in the typewritten text than in the typeset texts (well-spaced or irregularly-spaced). A post-test where judges rated text as needing more

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revision when typewritten rather than typeset suggested that more false positives may have been scored because typewriter faces carry a connotation of provisionality, and so subjects in the main experiment may have been applying stricter criteria to the typewritten text than to the other texts.

Introduction

With the growth of desktop publishing (DTP) documents that were once typewritten are now 'typeset' in printing typefaces and printed out on laser printers. Most laser printers have typewriter faces (usually monospaced, *figure 1*) but people seem to prefer printing typefaces (which are proportionally-spaced, *figure 1)*. A few people complain that typefaces are too formal for draft documents or documents intended only for a small circulation. But conventions for text presentation are changing, especially with the development of proportionally-spaced typefaces with a less formal appearance than traditional typefaces, intended specifically for DTP (*figure 2)*.

There is some evidence that proportionally-spaced type is read faster than monospaced (Payne, 1963), and so there may be functional justification for using well-designed, proportionally-spaced typefaces throughout document preparation. But we do not know if the advantage for proportional spacing applies across all document preparation tasks. It would be useful to know if it holds for proof-reading because changes in document production that have followedfrom DTP sometimes mean that documents are not checked as often as with traditional methods.

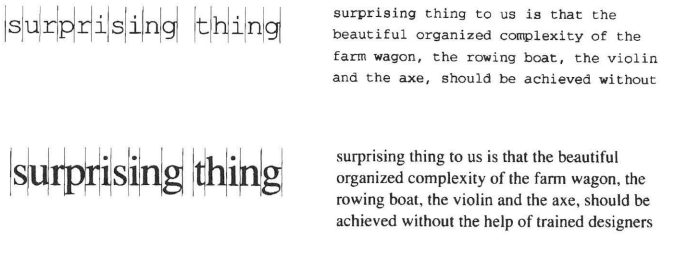

Figure 1
a. In monospaced, typewriter faces the character shapes are designed to fit a single, standard width.

b. In proportionally-spaced typefaces the horizontal spacing of characters is adjusted to fit each character shape.

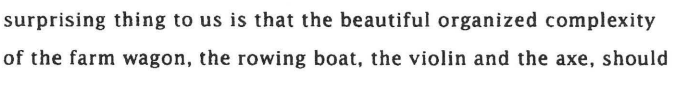

Figure 2
Proportionally-spaced typefaces with relatively informal styles, designed to be reproduced at medium resolution, may contribute to a decline in use of monospaced typewriter faces. The examples here are Lucida (a) and Stone serif (b).

Traditionally checks were carried out at least by author and typist, and in professional publishing, by editor and typesetter too. Multiple checks were necessary as texts were transformed across technologies from manuscript, to typescript, to typeset galleys. Because DTP combines authoring, page make-up and output of master copies in one system, desktop published documents may only be checked once, if at all, and possibly only by the author. So we should be sure that any checks that are made use text formats that maximize the chances of errors being detected.

One contributor to the ease of error detection may be the cohesion of word contour a particular typeface yields. People detect spelling errors that disrupt word contour (for example, 'eleven' to 'elelen') more easily than errors that preserve word contour (for example, 'eleven' to 'elenen') (Haber and Schindler, 1981; Healy, 1981; Healy, Volbrecht and Nye, 1983; Monk and Hulme, 1983). We might predict that the smoother the contours of words the more disruptive an error will be, and the easier its detection. We might also predict that proportional spacing, where letters occupy a horizontal space customized to individual letter shapes, might yield smoother word contours and easier error detection than monospacing, where the letter shapes are adapted to uniform spaces. And proportional spacing might bring about a general improvement in error detection if detecting spelling errors is relatively effortless and 'releases' cognitive capacity for the detection of other kinds of errors.

Below we report studies of the impact of monospacing and proportional spacing on error detection, starting with a pilot study in which we tested a range of monospaced typewriter faces and proportionally-spaced typefaces.

Pilot study

Method

We timed twenty subjects (students of the University of Reading, aged 18–25) as they proof-read ten single-page texts (from popular magazines, each approximately 350 words long). Five of the texts were set in different monospaced typewriter faces and five were set in different proportionally-spaced typefaces (the

typeface used for each text was rotated across subjects). Twelve plausible typing errors, consistent with the classification of errors given by Damereau (1964), had been introduced into each text. The kinds of errors introduced at specific positions in the text were determined semi-randomly (Watts, 1989). The errors were held in a consistent position across a particular text in each typeface by ensuring that line breaks occurred at the same point within the text.

At the end of the testing session subjects ranked all the texts according to how much they liked the appearance of the text and for how easy they felt the appearance of the text made error detection.

Results and discussion

We found no significant differences between monospacing and proportional spacing either in reading times, or in error detection, although the range of performance was greater for monospacing than for proportional spacing *(see table 1)*. However, subjects preferred the appearance of proportionally-spaced texts compared to monospaced texts ($T_{(20)}=21$, $p<.001$), and gave a higher ranking for the ease with which they expected to detect errors with proportional spacing compared to monospacing ($T_{(20)}=49.00$, $p<.05$).

Table 1
Mean times taken and number of errors detected in monospaced and proportionally-spaced texts in pilot study. The range for each condition is given in parentheses.

text type	monospacing	proportional spacing
times *seconds*	149.0 (86–219)	147.0 (92–205)
errors detected *max. 60*	47.7 (19–57)	47.8 (34-56)

The discrepancy between subjects' preference for proportional spacing and their performance in proof-reading resembled Tinker's (1963) finding that people's judgments of typeface legibility did not correspond closely with speed of reading. Nevertheless the strength of the preference begged the question whether, given a more difficult proof-reading task, there might still be an advantage for proportional spacing. This would be consistent with Payne's (1967) findings that there was no significant difference between speed of reading monospaced and proportionally-spaced texts when text content was simple, but that there was an advantage for proportional spacing when content was complex. We decided to re-examine the differences between monospacing and proportional spacing using longer, more complex texts than those tested in this study.

Main experiment

We compared proof-reading monospaced and proportionally-spaced texts and included a further condition: irregularly-spaced text (*figure 3*). The irregular spacing violated the spatial relationships usually recommended for legibility (character-spacing consistently less than word-spacing), so word contours were disrupted. The irregularities we created simulated the appearance of texts produced by inadequate or inappropriately used text processing systems (Black, 1990a).

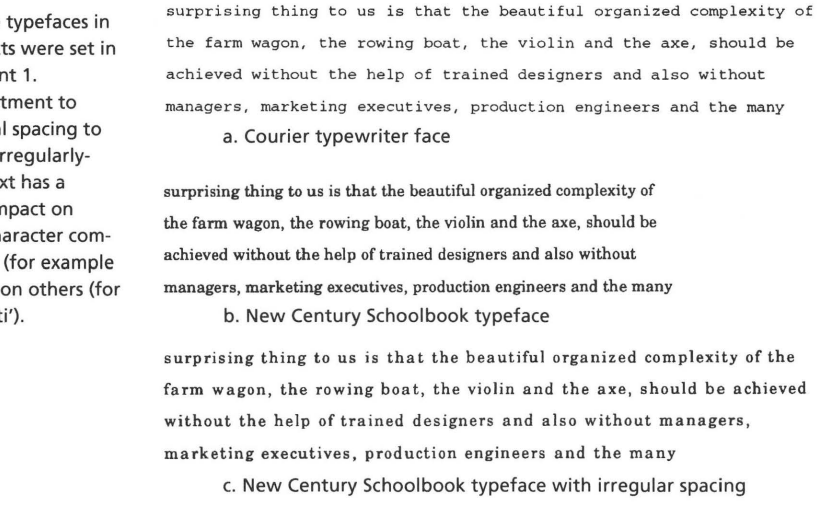

Figure 3
The three typefaces in which texts were set in Experiment 1.
The adjustment to horizontal spacing to produce irregularly-spaced text has a greater impact on certain character combinations (for example 'ie') than on others (for example'ti').

We predicted that reading times would be shorter and error detection better with proportional spacing than with monospacing; but worse with the irregular spacing than with monospacing.

We controlled error type, comparing detection of errors that disrupted word contour and errors that did not disrupt word contour. We predicted that disruptive errors would be detected more frequently than non-disruptive errors, but that where the typeface gave less effective information about word contour, subjects would depend less on global word-recognition strategies. Consequently the difference in detection of disruptive and non-disruptive errors should be reduced with irregular spacing and, to a lesser extent, with monospacing, compared to proportional spacing.

Additionally we included non-spelling errors (for example punctuation errors, repetition or omission of words) for a more general index of effectiveness of proof-reading in each typeface condition. The greater demands of detecting spelling errors in the monospaced and irregularly-spaced texts could reduce error detection overall. But a trade-off between ease of detecting spelling errors and overall accuracy was also possible. By making proof-reading easier, proportional spacing could reduce vigilance and so non-spelling errors might be missed. In contrast vigilance might be higher in the monospaced and irregularly-spaced conditions.

Method

Design

The experiment was a 3 x 2 mixed design, comparing typeface (monospaced, proportionally-spaced, irregularly-spaced) between subjects and error types (disruptive, non-disruptive) within subjects. The dependent variables were the length of time taken to proof-read the texts and the number of errors correctly identified.

Subjects

Forty-two students at Reading University (ages 20–34) volunteered for the experiment. All spoke English as their first language and had some experience of proof-reading.

Materials

A 9,000 word text drawn from *Design Methods* (Jones, 1990) was reproduced on twenty-three A4 pages, each of forty lines. Thirty spelling errors disrupting word profile and thirty maintaining word profile were introduced into the text from pages three to twenty-two. The errors were distributed so that there was an average of three of each kind of error (range two to four) on each page. Two additional filler errors (mistakes in punctuation, word repetitions and omissions) were introduced on each page from three to twenty-two (a total of 40 errors). There were errors similar to target errors on the first two and final pages. The position of the errors on the pages was determined semi-randomly and was consistent across conditions.

The texts were set in MicroSoft Word, version 3.01, on an Apple Macintosh computer and reproduced on an Apple LaserWriter Plus: the monospaced in Courier; the proportionally-spaced in New Century Schoolbook; and the irregularly-spaced text in New Century Schoolbook with an additional 1pt ($^1/_{72}$ inch) horizontal spacing added to each character. All the texts were set, ranged left, in 10pt type with 15pt vertical space between the baselines of successive rows of type.

Procedure

Subjects were asked to proof-read the text as quickly and effectively as possible, marking any errors they spotted. Their proof-reading times were recorded.

Results

Times

There were no significant differences in proof-reading times across the conditions (*see table 2*).

Table 2
Mean times to proof-read texts in each type-face condition in main experiment.

text type	monospacing	proportional spacing	irregular spacing
times *minutes*	50.1	47.9	48.2

Table 3
Number of disruptive and non-disruptive errors detected in each typeface condition in the first ten target pages and in the total twenty target pages in main experiment.

errors detected in first 10 target pages

text type	monospacing	proportional spacing	irregular spacing
disruptive errors *maximum 30*	24.4	25.8	24.8
non-disruptive errors *maximum 30*	21.1	22.8	19.4
total *maximum 60*	45.5	48.6	44.2

errors detected in total 20 target pages

text type	monospacing	proportional spacing	irregular spacing
disruptive errors *maximum 60*	48.3	49.6	48.8
non-disruptive errors *maximum 60*	38.7	38.5	38.7
total *maximum 120*	87.0	88.1	89.5

Error detection

The mean number of target errors of each type (disruptive and non-disruptive of word profile) detected in each condition are shown in table 3 (two separate sets of scores, for errors detected on the first ten target pages and total errors detected are given).

The mean total scores were 87 (73%), 88.1 (73%) and 89.5 (75%) respectively for the monospaced, proportionally-spaced and irregularly-spaced typefaces, with no significant differences between conditions, both over the first ten pages and over the total twenty target pages. Significantly more disruptive than non-disruptive errors were detected 48.9 (82%)and 38.6 (64%) respectively (significance for first 10 pages, $F_{(1,39)}=75.00$, $p<.001$; for total 20 target pages $F_{(1,39)}=108.28$, $p<.001$). There were no interactions between typeface condition and error type for either the first ten pages, or the total twenty target pages.

The mean totals of filler errors detected were 26.6 (67%), 27.0 (68%) and 21.4 (54%) respectively in the monospaced, proportionally-spaced and irregularly-spaced conditions (*see table 4*). The effect of typeface condition was significant over the total 20 pages, $F_{(2,39)}=5.68$, $p<.01$. Planned comparisons of the means showed a significant difference between the scores for the monospaced text and the irregularly-spaced text $F_{(1,39)}=6.14$, $p<.05$.

Table 4
Number of filler errors detected in each typeface condition in the first ten target pages and in the total twenty target pages in main experiment.

filler errors detected in first 10 target pages

text type	monospacing	proportional spacing	irregular spacing
errors *maximum 20*	14.2	14.3	12.3

filler errors detected in total 20 target pages

text type	monospacing	proportional spacing	irregular spacing
errors *maximum 40*	26.6	27.0	21.4

The mean number of false positives, that is, marks made by subjects where they believed there was an error, although an error had not been intended by the experimenters (for example, queries of the legitimate use of capitals, spellings or punctuation) were 12.2, 7.2 and 5.1, respectively in the monospaced, proportionally-spaced and irregularly-spaced text. There was a significant difference among the conditions, $F_{(2,38)}=3.629$, $p<.05$. Comparisons of false positives in each condition over the first ten target pages and over the second ten target pages showed no significant difference in the monospaced text but significantly more false positives in the first half of both the proportionally-spaced and irregularly-spaced texts ($t_{18}=2.399$, $p<.05$, two-tailed and $t_{18}=2.25$, $p<.05$, two-tailed, respectively) (*see table 5*).

Table 5
Mean number of false positives detected in each typeface condition in the first ten target pages and in the second ten target pages in main experiment.

text type	monospacing	proportional spacing	irregular spacing
false positives in first 10 target pages	6.5	4.9	3.9
false positives in second 10 target pages	5.7	2.3	1.2

Discussion

The primary measures (reading time and error detection) suggest that the processes underlying the detection of spelling errors are robust enough to survive variation in the horizontal spacing of words when text is monospaced, proportionally-spaced or irregularly-spaced. The higher rate of error detection for disruptive errors compared to non-disruptive errors confirmed the importance of global contour-recognition processes in all conditions.

The secondary measures (detection of filler, non-spelling, errors and marking of false positives) suggest differences among the three conditions. The detection of significantly fewer filler errors with irregular spacing suggests that it was more

demanding in proof-reading than the other two conditions. The greater difficulty of proof-reading irregularly-spaced text was perhaps only evident in the failure to detect filler errors because there were more spelling errors than fillers, so subjects' attention was directed specifically towards them. If a more even distribution of error types had been used there might have been a more even distribution of detection and omissions.

There was a rather different pattern in the scoring of false positives: false positives were significantly higher in the monospaced condition. This pattern did not relate to the number of target errors detected (there were no significant differences across conditions). A possible cause of the different pattern for false positives may have been assumptions made by the subjects about how provisional or final the text they were reading might be. The subjects were not told where the text came from. The typewriter face used in the monospaced condition may have suggested provisional status more than the other faces, and so may have prompted more suggestions for alternatives to the acceptable forms given in the text. In order to check whether suggesting a connotative influence on proof-reading was plausible, we carried out a post-test examining people's assumptions about the provisional or final status of typewritten and typeset text.

Post-test and further discussion

Six pages of the text used in Experiment 1 were presented to twelve judges, drawn from the same subject group as in the experiments, but who had not participated in the experiments themselves. Two consecutive pages of the text were in monospaced, typewritten format, two were typeset in proportionally-spaced format and two were typeset in the irregularly-spaced format used in the experiment. The format of consecutive pairs of pages was systematically varied across judges. The judges read the texts and were then asked to rate on a scale of 1 to 7 the amount of editorial intervention that each pair of pages required.

The judges rated the need for editorial intervention as higher for the monospaced texts than for the other two conditions ($X^2_r=7.16$, $p<.05$, d.f.=2).

Table 6
Post-test ratings of editorial intervention required for texts presented in monospaced, proportionally-spaced or irregularly-spaced formats (1 no intervention; 7 substantial re-writing).

text type	monospacing	proportional spacing	irregular spacing
mean rating (1 to 7)	4.7	3.6	3.6
range	(3-6)	(2-5)	(2-6)

In considering the results of the post-test we return to the starting point of the study: to find out whether effectiveness (speed and accuracy) in proof-reading is influenced by the horizontal spacing of text. The pilot study and main experiment failed to show the predicted difference between monospacing and proportional spacing, even though subjects preferred the appearance of proportionally-spaced texts and felt that it would be easier to detect errors in them.

The studies showed effective proof-reading where characters and spatial parameters had been designed together (either character shapes adapted to fit unit widths in monospacing, or character widths adapted to individual character shapes, as in proportional spacing). Proof-reading suffered only with irregular spacing where canonical relationships between character and word-spacing were disrupted. So the results of the studies would not support recommendations that proof-reading should be carried out exclusively in either proportionally-spaced or monospaced text.

Despite these findings the false positives in the monospaced condition suggest that text format may, nevertheless, have an impact on proof-reading, albeit at a different level from the one we considered initially. Text may be checked more thoroughly if its format suggests provisionality. The idea that different kinds of typefaces have different 'rhetorical significance' for users would not surprise type designers or typographers; and psychologists have investigated people's judgments of the connotative and semantic qualities of typefaces (Bartram, 1982; Walker, Smith, Livingston, 1986). But a functional impact of

different typefaces is difficult to isolate, and typeface choice has not been investigated at a level beyond legibility studies.

In the case of text preparation, the suggestion here, that the connotation of provisionality carried by typewriter faces affects proof-reading strategies, complements observations that inexperienced designers may not experiment as fully when they are drafting on screen as when they are drafting on paper (Black, 1990b). In that case the screen representations tend to give feedback with a very finished appearance compared to the provisional appearance of pencil sketches, and so may divert the inexperienced user from full testing and experimentation.

Finally we note authors' anecdotal reports that they see errors in text, once it has been typeset in a typeface, that they missed several times when checking typescripts. Such reports suggest that although a typewriter face may indicate provisionality, and the need for careful checking, author familiarity with the format of a typescript may also mean that errors are missed. Seeing text in more than one format may increase the likelihood of detecting errors. So desktop publishers may be wise to mimic the conventional progression from typewritten drafts to typeset documents, even though DTP provides typefaces from the earliest stages of document preparation. A typewriter face will cue the provisional status of early drafts, and so encourage stringent checking. A typeface at a later stage (which, in DTP, will not involve re-keying text and the possibility of introducing new errors) will increase the chances of detecting errors that, due to over-familiarity, may have previously been missed.

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Computers as Theater

Brenda Laurel
New York: Addison-Wesley,
Publishers, 1992
211 pages, cloth,
8 full color pages, $19.50
ISBN 0-201-51048-0

How many times have you seen it taped onto a wall near a personal computer or terminal? A xerox copy of Jeff MacNeeley's character "Shoe," sledge hammer in full swing, slicing through a balky personal computer over the droll caption "Press any key to continue." Its humor pivots on a nagging truth: after all of our efforts to create computing systems which users like, they're just not there yet.

In *Computer as Theater*, Brenda Laurel offers a model of dramatic theater "to improve the quality of human-computer experiences through new approaches to their design," which is "meant to give readers a new place to stand when considering the design of human computer activity."

The book concerns the "user-computer interface. It is a term used often, but as yet there's no consensus concerning what it means. In a previous *Visible Language*, (23:3 3/4, 266) Gui Bonsiepe wrote "...as the handle of the hammer couples structurally the human body to the tool, the interface works as the 'handle' for the program." That "handle" consists of physical hardware (controls, displays) and software (program control structures and images captured from video and optical sources or generated by software). Laurel focuses on software, using, as her proving ground, the games and informational programs she worked on at Atari and Oz. I'd like her to go further, though. How would she deal with the bane of large organizations these days: menu-driven phone answering systems? How would she deal with the fact that software is always "canned?" In true human conversations, both parties listen to and respond to each other. But computer software presents only choices pre-determined *by program designers* and doesn't listen to user needs at all. How can it approach genuine drama if one party — software — is deaf?

This book easily belongs to software program designers and programmers, who influence the form and style of mass-produced software. It also appeals to intellligent users: the guerrilla brigade of multi-media producers using CD ROM and hypermedia. Animate programs have the most potential to show the benefits of her dramatic concepts.

What are the book's core points? Two chapters on "Dramatic Foundations" present elements of qualitative structure and ways to orchestrate action based on Aristotle's *Poetics.* The preface notes "by examining the world of human-computer activity with the same rigor and logic as

Aristotle applied to the literary arts, we can arrive at a set of principles that may provide greater acuity, robustness and elegance than the piecemeal science that often guides the design of human-computer activity." It's a tall order. She reviews *Poetics*' key features and, on page 50, draws a parallel between drama and human-computer activity using Aristotle's six qualitative elements of structure. Do they really translate one-to-one? I don't think so. For example, drama's purgative effect comes from *humans* observing *humans*. It is a leap to ascribe human traits to agents embodied in software code. It's a further leap to expect humans to imbue them with actual human traits.

A chapter follows on "Dramatic Techniques for Orchestrating Human Response." Her writing seems to assume that existing software is a good match with user needs and goals, and that systems are well-designed. We know what technology offers us — its process is clear, but its utility isn't. As an artist, Laurel can bring meaning to the use of computers. Why *do* the things she invites us to? What results do people get if they do, or do not? How is our life better? More comfortable? Am I more satisfied as a result? Wiser?

The fifth chapter presents twelve "Design Principles for User-Computer Activity," these are tips on how to implement her theories. Few of them reflect the previous text on dramatic models. Each is abstract enough to allow for broad interpretation. For example, the first states: "Think of the computer, not as a tool, but as a medium." Fair enough. The reader then needs to know the depth and scope of that idea. Instead, the text which follows fails to mention how the reader is to use that guideline, or what will happen if one does or does not.

The final chapter, "New Directions in Human Computer Activity," shows how her ideas work. It wasn't until she discussed The Guides project that I began to enjoy the book. A good story in a few pages told what chapters of theory hadn't.

How well grounded are her main points? Laurel's experience provides her with familiarity and insight into programs and their development, but it also seems to limit her analysis. She reviews individual software programs, yet misses some "big picture" issues. For example, programs, operating systems and equipment are very often incompatible. It's a major problem between users and computers and it's one which deserves her attention.

Where does this book fit? It isn't an omnibus, such as Ray Kurzweil's *The Age of Intelligent Machines* (MIT Press, Cambridge Massachusetts, 1990). It's not a "how-to" book, like the hundreds of programming guides which line bookstore shelves. Instead, it fits somewhere in-between. It's a monograph on applications design. Instead of a scholarly hard-bound text, a more popular medium would be better suited to her avant garde audience and intent. It's an irreverent skateboarder dressed in an ill-fitting tuxedo. Ted Nelson's *Computer Lib* was a better combination of message, medium and audience. Another format point: we really need to see how her ideas play.

Text is a poor medium to convey the complexity of the ideas she presents. We need a dramatic medium, such as a disk or videotape with commentary to show us the meaning of her ideas in action.

Rather than smoothing the presentation of thoughts, her editorial style gets in the way, skipping from scholarly to technical to chatty: coined words are used but not explained and personal family anecdotes are lumped in with research report citations. Is this a scholarly piece? A magazine article? An electronic mail message between pals? To her credit, Laurel is working on challenging material, striving to make sense of a number of evolving trends. It's not easy to both break new ground and also be clear — yet, even as a visionary, she needs to tell us what her ideas mean. What implications do they have for us? Laurel's book spends a lot of type discussing theory. We could learn a lot more if she would just tell us her ideas and show how they work. *Computers as Theater* is full of interesting insights, but the book gets in the way.

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Modern Typography, an essay in critical history

Robin Kinross
London: Hyphen Press, 1992
206 pages, paper, illustrations, $30.00
ISBN 0-907259-05-7

Underpining this book is the premise that typographers need to incorporate critical reflection into their practice. This goes hand in glove with the author's insistence that "design" is a verb rather than a noun. This particular time, which is heavily marked by typographic style and technological manipulation, has no critical viewpoint. The typographic goal is often "Design" as a noun with a capital D. This is the situation for which Kinross provides the antidote. The circular logic of the modern — is it new? Yes. Good. Oops, now its old. Look for the new — is it new?. . . encourages novelty and rule breaking as the means to continually invent the new. While this description is a kind of sequence in time, it is not a critical process, new ends are quickly judged against the just previous ones.

It is legitimate to ask: What is critical reflection for the typographic designer? Several critical frameworks can be applied: reflection on order, hierarchy and system, basically a questioning of visual syntax, which is the most common framework; reflection on content and form in relation to a particular audience, this can relate back to visual syntax as well as to legibility, media and aesthetic characteristics; reflection on content and its expressive dimension in order to engage the reader; performance testing to determine the utility of a design; and reflection on the history of typographic philosophy and practice. Kinross develops this last frame by carefully developing the answer to the question: What is modern typography? From its beginnings with Moxon's *Mechanik Exercises* (1683) in which the craft of typography separated from the craft of printing until almost the present day, the author weaves together a broader context for looking at history marked by a longer view of modernism as an idea remarkable for more than its appearance alone. Many typographic histories use the same tried and true benchmarks with the same tired analyses and comparisons which over the years have developed into a "right" history rather than into a dialogue or scrutiny yielding new insights. These typical histories often stay rigorously close to type design itself as a craft or perhaps introduce technological change as it alters the craft, but these are not histories that seek to locate typographic development in a larger cultural framework.

This is not the case in *Modern Typography,* where the author is concerned with rooting type design and typographic application in its cultural context. Just as different typographic sensibilities marked various locations such as Germany, Italy or France in the first century of printing, Kinross explores the differences between Germany,

the low countries, Switzerland, Great Britain and the United States in this century. In some cases this is a long overdue revisionist history, such as the debunking of the Bauhaus typography myth, or the observation that Ulm conceived of, but never really put into practice, a critical approach to typography. There are ideas to ponder here.

In his broad overview of modern typography, the author does not fail to flag for the reader the primary debate which still continues between the instrumental, serving nature of typography (the traditionalists) and typography as an expressive, constructive medium (beginning with Lissitzsky's new typography and ongoing today in avant-garde typographic application and type design). Wisely, the author does not take a stand.

Despite the broad sweep of the material within this book some important historic twentieth century language phenomena are overlooked. These various language reform movements beginning with Herbert Bayer and lowercase only typography through the Shaw competitions and such mid-century innovations as the Initial Teaching Alphabet deserve our attention. It is a mistake, in my judgment, to divorce typography from visible language in its completeness. Yet another omission is the interesting history of the search for machine readable letterforms such as those by Wim Crouwel. The need for language reform continues while machine readability of letterforms has become a non-issue. Both of these episodes were the result of rationality and modernism as applied to language and its typographic form or to letterform and its compatibility to then current technology. These two examples demonstrate another critical framework that seeks to examine the verb "design" in relation to some need, i.e., a less confusing orthography. In times of technological ferment, selection of the "right" problem for investigation may not be obvious. Machine readable type is a cautionary example as computing power and memory overtook the limited search space of the original visual problem. Another phenomena that the author does touch upon is that of legibility testing. The author mentions the earliest testing (late 18th century) through the 20th century and observes that the psychologist's legibility testing was without benefit of printer consultation leading to a persistent unreality. Even the simplist typographic application contains many variables — size, line-space, line length, typeface to mention only the most obvious of them — bringing these variables into a productive harmony (legibility) is less a matter of formula and more a matter of empirical judgment by a skilled eye and mind. Even today, psychologists create legibility studies without the benefit of a typographer. They know how to test, how to isolate a variable and how to do statistical analyses. Because the design of the test material often is so far removed from reasonable typographic performance, practitioners look at the statistical

results with suspicion, wondering what value the results of an obviously flawed design has in terms of practical application.

Like others examining the recent past, Kinross marks 1970 as a new phase in the western world, resulting from technical, economic, political and philosophical shifts. The end of expansion, difficult economic times, the oil embargo, and according to some, an event as specific as the Concorde's lack of acceptance in this country, signaled a shrinking technological desire. The optimism and belief in progress that created an easy acceptance for modernism was eroding. The author, however, is not won over by post-modernism's liberating effect on typography in particular. Instead, he finds it reactive rather than constructive, bringing to the fore the avant-garde past of Dada and early new typography. He observes that these, once political and critical typographic ideas, have become domesticated and are used for stylistic ends.

In contrast to the flap and fashion surrounding post-modernism, the author maintains that the modern project is not complete — evidence of its continuation is visible in the rational discussion of metrification of type measurement and interest in typographic nomenclature and classification. These are more than theoretical ideas or issues of convenience, they are essential to production and global trade. In conclusion, the author says: "The attempt of this essay has been to point to the effort of reason that has extended over centuries and which, in typography, has shown itself in a concern for fundamental issues: the means by which the processes of production can be controlled; the ways in which the needs and desires of readers and users can be incorporated into the shaping of products; the description and ordering of the activity and its materials. . . There is some connection between this critical rationality and an approach to the production of artefacts and their eventual form." (144)

Where does this leave us in the search for critical typographic practice? Kinross is beginning a critical discussion with this book — he gives us a new vision of the modern. He is putting cultural history and typography together as a demonstration project. We have outgrown a purely craft or purely aesthetic orientation to typography — we need somethingelse. Designers' fascination with typography, and in a larger sense with visible language, is that the system is clear, it has rules that are marked sometimes particularly in the breaking. In contrast, the realm of the image seems disordered and vague. Reading between the lines in *Modern Typography*, I get the idea that this is the first of several books, that the author is, in the end, stalking something more inclusive than typography, perhaps design as a verb.

Reviewed by Sharon Helmer Poggenpohl, the editor and publisher of this journal, who also teaches typography at the Rhode Island School of Design.

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