In the seventies the profession paid new attention to invention in writing; Ann Berthoff in *The Making of Meaning* (1981) and other researchers investigated the visual dimension of thinking. They demonstrated how to use visual representations such as mapping, cubing, clustering, and branching to generate ideas and how to use visual games and photographs for increasing perceptual acuity. As a result, the widespread use of these aids has proven successful in creating connections during invention, particularly for students with a dominance of what Howard Gardner (1983) describes as "spatial intelligence" (p. 9), that is, intelligence that emphasizes visual relationships. In the following years, however, the role of the visual within the writing process did not expand beyond invention in the traditional writing class, and visual topics were relegated to technical and professional writing courses. This situation has endured despite the fact that all students rely to some extent on visual interpretation.

In a very real sense writing classes have denied the physical reality of writing, the fact that words on a page are actually physical entities, black marks on a white surface or black marks on a white screen. The illusion maintained by this denial is that the physical words on a page have no part in the interplay among writer, text, and reader in constructing meaning—that, like the spoken word, the written word is primarily a mental construct (Berthoff, 1996). Yet this illusion is constantly contradicted by our admonitions to students that grammatical and mechanical errors interfere with the construction of meaning. Failing to recognize words on a page as physical entities denies the reality of the surface, the actual page upon which we write; otherwise, we would have no response to the student who protests a lowered grade because of spelling errors by declaring, "But you knew what I meant!"

**Visual and Verbal**

Responding to this kind of denial, Rudolf Arnheim (1969, 1974), in his work on visual thinking, argues that an artificial distinction has been made between the verbal (associated with the intellect) and the visual (described by Arnheim as "perceptual concepts"). When psychologists address cognition, they often separate knowing into two types of knowledge: *perception* or sensory knowledge, and *conception* or thinking and judgment. While the division of these two separate ways of knowing facilitates our understanding of the processes being described, the separation itself remains an artificial one. Suzanne Langer (1942)
attempted to bridge this artificial separation by describing the thinking that exists in what is considered perception, calling those thoughts presentational forms, nondiscursive visual forms capable of being articulated. Langer, basing her theory on Gestalt psychology, suggested that the processes, the perception of imagery and verbal activity, occur simultaneously. Visual forms do not present constituents successively, but simultaneously. Langer believed we abstract a form from each experience and use this form to conceive the experience as a whole:

> Unless the Gestalt-psychologists are right in their belief that Gestaltung is of the very nature of perception, I do not know how the hiatus between perception and conception, sense-organ and mind-organ, chaotic stimulus and logical response, is ever to be closed and welded. (p. 90)

Some ideas are too subtle for speech and rely on these nondiscursive forms:

> The recognition of presentational symbolism as a normal and prevalent vehicle of meaning widens our conception of rationality far beyond the traditional boundaries, yet never breaks faith with logic in the strictest sense. Wherever a symbol operates, there is a meaning; and conversely, different classes of experience—say reason, intuition, appreciation—correspond to different types of symbolic mediation. (Langer, 1942, p. 97)

> These perceptual concepts are nonlinear, nondiscursive, unlimited by what the mind can retain in words from the beginning of a perception to the end of it. But they are thinking nonetheless, albeit thinking that does not lend itself readily or entirely to words.

Neglecting these forms of thought in writing instruction, however, and maintaining the artificial separation between the two forms of thinking, limits students to what fits in words alone. It means that students are taught to ignore visual information beyond the noise level, i.e., the level of mechanical error, rather than to see the visual and verbal as one congruent whole. Yet generations of writer/designers from the medieval scriptoria to Albrecht Dürer to William Blake to Mallarmé have been aware that visual and verbal are, in fact, united, that words exist as visual entities before entering the consciousness of the reader. Arnheim (1969) argues that "an abstractive grasp of structural features is the basis of perception and the beginning of all cognition" (p. 161), a grasp through "clear-cut directions, sizes, geometric shapes, colors, or textures" (p. 46).

> I remember writing "Abandoning the Child" in 1971 for an Eranos
lecture. My image of it was a collection of very simple water colors. And I just wanted to do a little one here, one there, a little one on the "dead child," a little one on the "tree and child"... like you go through a gallery, and it didn’t matter which picture came first; there was no conscious order between the phenomenological images of the theme. I didn’t want to build anything, get heavy with it. I wanted to keep it all a series of images touched lightly, water colors. (p. 158)

And again:

When I worked on Dionysus and Hyst eria [Myth of Analy sis, Part 3 (1969)], I remember saying I feel like I’m inside one of those great big sculptures, a Henry Moore, or one of those huge things of steel girders, and I’m doing all I can to weld huge chunks of steel together. It was like a great physical, exhausting, sculptural work. So those images of what I’m doing when I’m writing have nothing to do with what I’m writing, but they become necessary for my imagination to do it. It’s like it prevents and it forms. (p. 159)

Revising writing instruction to recognize this unity between the visual and verbal means seeing writers as writer/designers and helping them to develop the harmony of message between them. Given the vast potential of desktop publishing, it is no longer necessary for a writer to leave all decisions concerning visual information to others. Novice writers who are improving their facility in language need concurrent development of their intuitive sense of form and information regarding the visual dimension of text. Just as we have discarded the notion of standards of correctness as the means of developing effective writing style, writing instructors must also embrace more than sterile graphic principles to enable students to produce effective documents. During the process of visualization, the physical page become both malleable and seductive in the same way that concepts are labile in the process of forming text. And the creative impulse becomes clearly the same for both dimensions of writing (Arnheim, 1969, p. 308).

According to Arnheim (1974), any abstraction can be translated into visual form, becoming a visual concept (p. 159). The properties of the abstract thus become physical: "During the moments in which a human being is an artist, he finds shape for the bodiless structure of what he has felt" (p. 169). Visual experience is a "transaction between the viewer and the object"; meaning arises from the "interplay of activating and balancing forces" within a work (pp. 37, 53). Moreover, the visual form is not arbitrary but a "precise interpreter of the idea the work is meant to express." Its subject matter becomes the embodiment of its theme, "exactly correlated with a formal pattern" (p. 460). Neither form nor subject is the content of art; the two are inextricably bound (p. 461).

Although Arnheim gives his attention primarily to works of visual art, it is possible to apply his principles and descriptions of structural design to page design. Thus Arnheim’s (1974) observation that any place that “coincides with” part of the structural framework “introduces an element of stability” (p. 14) can
be juxtaposed with the symmetrical structure of the "classic" page as described by Suzanne West¹ (1990). The reliance in the classic page on balance and harmony also echoes Arnheim's (1974) observations about the properties of simplicity—"parsimony" and "orderliness"—which produce a "leveling," reducing unique features and enhancing symmetry (p. 67). A classically designed page produces a sense of stability and order, reinforcing the perception of harmony. Writers who are aware of these features can use these visual principles to emphasize the message of their documents, as in the design of the traditional essay or argument where the sense of stability and order lend to the symmetry of the message. Or writers can avoid these principles if the verbal message conflicts with the visible message of permanence. Writers can invoke the "dignity and readability of classical traditional typography" (Meggs, 1992, p. 365) to confer traditional dignity and stability on a radical position, as in the case of Dugald Stermer, the designer of the 1960s magazine Ramparts. Stermer used page design to convey the message that the information in Ramparts represented authority as surely as did the information in more mainstream publications. Stermer also used page design to place the message of Ramparts on the same footing as the message of the establishment press it sought to displace.

A further dimension of the conjoining of visual and verbal is suggested by E.H. Gombrich's description in Art and Illusion (1960) of the interactive play between an agency to convey perceived concepts and the concept itself. The chosen vehicle of the artist determines not only what artists convey to the audience, but also plays a role in what artists perceive:

The artist, clearly, can render only what his [sic] tools and his medium are capable of rendering. His technique restricts his freedom of choice. The features and relationships the pencil picks out will differ from those the brush can indicate. Sitting in front of his motif, pencil in hand, the artist will, therefore, look out for those aspects which can be rendered in lines. . . . [H]e will tend to see his motif in terms of lines, while, brush in hand, he sees it in terms of masses. (p. 65)

The implication of this interactive play for writers is clear. Writers with a visual repertoire consisting only of the classically designed page will not only be limited in conveying what fits the design of that page, but those writers will also be limited by that design in what they can perceive.

The Visual As Scene

Another generative approach to understanding the role of the visual in writing is through the application of Kenneth Burke's concept of scene. Until recently, scene has been largely available to prose writers strictly in the form of verbal description. Although writers could create scene as part of the drama of

¹West defined the classic or traditional page as one that emphasizes order, symmetry, balance, and proportion.
the interaction through descriptive words, much of the actual scene in which words were presented on the page, the physical layout and appearance of the prose, has, of necessity, been the domain of the publisher. Unlike poetry, which could be shaped, or actual drama, which could be placed in a stage setting, the scene of prose was largely limited to the visuals of paragraph size and length, the placement of headings, and the size of margins. To describe what we mean by scene in this context, we must first look at Burke’s (1969) definition of the term within the Pentad, where he describes scene as “setting or background” (p. 3). This setting contains the “act,” and in the principle of drama “the nature of acts and agents should be consistent with the nature of the scene” (p. 3). In exploring this concept, Burke demonstrates how a drama is enacted in a setting that both “realistically reflects the course of the action and symbolizes it” (p. 3), as, for example, the kitchen of the Loman home in Death of a Salesman that serves as a last refuge against the depersonalization of the outside world and the heath in King Lear that serves as a physical representation of the chaos of Lear’s madness.

We believe that all writing has the possibility for creating the physical scenes once left to stage setting in drama and the shaping of poems. These physical scenes can contain the act and dramatize the scene in which the writer apprehended a percept or concept. Keeping in mind that in scene Burke also included suggestions, we assert that those suggestions can be extended to the feeling created by the placement of prose, as well as the typography, spacing, and other elements of layout.

Clearly, too, readers participate in constructing the scene as they participate in constructing meaning. When we asked a group of graduate students to describe the scene in the first stanza of John Donne’s poem “The Sunne Rising,” with its shaped lines, they responded that the lovers were in the bedroom and that the undulating lines represented the movement of the curtains at the window. When we asked them to explain how they knew that the lovers were in a bedroom instead of a kitchen, they referred to the traditions of love poetry, indicating their shared sense of reference with the poet.

Because of the generative powers of Burke’s Pentad, the visual dimensions we are describing may also be considered a component of act and agency, and all of these aspects provide insight into the importance of the graphic in prose. Our emphasis here, however, is on the use of the visual by writers themselves; thus we concentrate on the visual as scene. Yet, even if we accept the unity, indeed the symbiotic relationship between visual design and verbal message, difficulties remain in adapting abstract design principles to dynamic messages. How can the writer learn to use both dimensions? Are there any absolute meanings in the graphic language of the page?

The Visual as Sign

In semiotic terms the words on the page are patent signifiers; they stand for both the linguistic meaning associated with them and the meaning associated with their visible appearance. But there is a contrast between the traditional stance that ignores the surface or visual aspect of print, addressing only the deeper,
verbal meaning, and the stance of those writers, like poets, who deliberately choose to emphasize surface, designing the space as well as writing the words. Writer/designers thus deconstruct the meaning of a text and then reconstruct it as a visual artifact. Readers, in turn, have both the signifier and the signified with which to construct meaning—the visual and verbal meaning and their interrelationship. The commonly held idea that readers actually deal only with the verbal dimension, the signified, is in fact an illusion: the page refuses to become transparent. The use of design in advertising alone gives some indication of the vast potential for reader and message manipulation inherent in page design, a potential that students should be aware of both as writer/designers and as reader/consumers. But rather than describing this process as manipulation, we suggest that writer/designers create a page environment that moves readers away from a distanced, passive stance and into the form and mood of the page. Readers, then, participate in creating meaning in this environment, and a higher degree of perceptive/conceptive insights by writer/designers is conveyed.

The dimension of writing that goes beyond the semantic level has rarely been addressed in formal writing instruction because in the past writers had little control over the design of their texts. As writers attain greater control over every aspect of the page through the availability of electronic publishing technology (and to a lesser extent through the page design features of most word-processing programs), they may become even more aware of the visible surface, breaking down the commonly held assumptions about the division between surface and meaning.

The distinction here involves what Norman Bryson (1983) refers to as the "deictic trace." He borrowed the concept of deixis from classical rhetoric and linguistics, where it described "utterances that contain information concerning the locus of utterance" (p. 87). Western painting, Bryson argued "is predicated on the disavowal of deictic reference, on the disappearance of the body as site of the image..." In deixis the utterance is continuous, temporally, with the event it describes" (pp. 89, 95). In other words, Western painting has treated both the viewer and the act of creation as irrelevant, as if paintings existed in a separate reality without the interaction of the viewer or the evidence that paintings are, in fact, a product, a construction. In contrast, Bryson describes "the painting of the glance," including much modern art and non-Western art, which "addresses vision in the durational temporality of the viewing subject," not excluding the viewing process or the evidence of production (p. 95). Rather than being a disembodied ideal, art in this sense includes both the painter's techniques and the viewer's physical participation in its creation. In this connection writer/designers seem to acknowledge the "deictic trace," the surface properties of their texts, realizing that words exist as physical entities, what Bob Brown calls "black riders" (as cited in McGann, 1993), rather than strictly as disembodied mental constructs. And the acknowledgment of this physical dimension opens possibilities both for creation and chaos.

The page in this sense becomes a "rich sign," combining icon, index, and symbol (Silverman, 1983, p. 22). The page literally pictures the information it conveys, becoming an icon, but it is also indexical in that it directs the eye through the elements of page design. It is likewise symbolic in that it creates a subjective
reaction through an arbitrary association. Thus, for example, advertisements for luxury products such as expensive perfume use greater amounts of white space, relying on the connotative equivalence of space and status and implying a symbolic relationship between their products and improvement in social rank. Similarly, academic formats like syllabi convey the intended organization and environment of the classroom, and paper formats like lab reports convey both the type of information being presented and the tradition in which that information should be seen, that is, a scientific world view. Like Roland Barthes' "kitchen of meaning" (1986, p. 157) in which the world around us provides daily the signs of life-images, gestures, behaviors—that we constantly interpret—so the page becomes a comparable kitchen of iconic, indexical, and symbolic meaning. The visual elements of this page speak to readers in a rich extension of the usual I see what you mean, as writer, like visual artist, "draws attention by choosing to expend psychic energy upon [the artists' subjects] in creative ways, for example, by exhibiting or rehearsing or celebrating their very existence, by dramatizing or developing attitudes toward them, by eking out the enjoyable or judging the reprovable in them" (Tejera, 1965, pp. 94–95).

The page also contains definite paradigmatic and syntagmatic relations. The syntagm is represented by elements in contiguity on a single page, such as the various typographical treatments of words at different levels of heading and text. The paradigm is formed by the similarity of design from one document to another, from computer manual to instrument manual to textbook to essay. Design elements thus have meaning both in microcosm and macrocosm, referring inward to the other elements of the immediate context and outward toward an entire range of connotative references. And these frames of reference have effects on both writer/designers and readers, governing the way in which text is seen and processed. In another sense, the page represents a type of "aesthetic code," with various "multivalenced signs" such as white space, signs that can represent a variety of "signifieds" depending on context (Berger, 1984, p. 36). And in this connection the page becomes a part of Barthes' "mythic structure" (1972). Writer/designers fill the form with content; interpreters strip away the form of the design from the message; but readers reassemble the message/design in its entirety (p. 128). The myth, according to Barthes, "transforms history into nature" (p. 129); it is, moreover, stronger than our rational interpretations of it; even if we understand the myth, the code the visible page is conveying to us, we cannot do away with it. "Nothing is safe from myth," Barthes states; it will invade and transform everything it touches (p. 131).

A clear application of this principle is the example of Ramparts magazine described earlier. There the page design represented a complex interplay of competing elements, a deep structure working with the text itself to convey meaning. This page design brought to immediacy the power of the myth in which Stermer sought to participate.

In sum, visual information means one thing deliberately, another metaphorically. Writer/designers may aim for one particular effect, readability, for example, yet may enlist an entire range of meaning beyond simple readability inherent within individual signifiers. The page becomes more readable both in the traditional sense of conveying information and in the connotative sense of conveying
readability as a subjective metaphoric quality. Interpreting the page involves reading both its denotative and connotative information.

The Ethos of the Visual

Thus, we are brought to one of the most compelling reasons for incorporating instruction about the physical properties of the page in the writing class: the capacity of the visual to reinforce the ethos of the message. Philosophers of language have sometimes fostered profound and fundamental distrust of spoken and written language. But perhaps this distrust has been extended to written language in part because of the split between words as conveyors of thought and words as physical properties in a created environment.

Michel Foucault (1972) speaks of the appropriation of language by various discourse communities: “Thus the statement circulates, is used, disappears, allows or prevents the realization of a desire, serves or resists various interests, participates in challenge and struggle, and becomes a theme of appropriation or rivalry” (p. 105). But, in the same essay, he also describes the relationship of the statement to its surrounding field. “[I]t is endowed with a certain modifiable heaviness, a weight relative to the field in which it is placed, a constancy that allows of various uses, a temporal permanence that does not have the inertia of a mere trace or mark. . .” (p. 105).

If, then, writer/designers create a visual environment for the statement that conveys its perceptive/conceptive field and captures more of the sensory environment in which the concept was apprehended, it follows that the statement has a decreased chance of being misunderstood or appropriated into inappropriate contexts. To permit an optimal understanding of concepts under discussion, writers achieve ethos through careful attention to precise words, specific details, and clear examples, so too attention to the atmosphere created by the visual environment provides a similar ethos. Writer/designers’ sent message and readers’ created meaning develop in a context that give readers access to more of the writer/designers’ intention and purpose.

The Visual In The Writing Classroom

Given these premises then—that the physical properties of the page represent another dimension of text and that this dimension is also the domain of the writer—what are the implications for the writing class? In “Grammars of Style: New Options in Composition,” Winston Weathers (1976) called for a freeing of writers from the confines of what he described as “the box,” the eight-and-one-half-inch-by-eleven-inch page. Weathers reminded us of the freedom achieved by writers such as Gertrude Stein through the use of alternative forms that he called “grammar B,” forms such as lists, labyrinthine sentences, crots. At that time the freedom from the box that could also be attained through alternative visual forms was not available to all writers through desktop publishing and word processing programs as it is today. Our contention is that the writing class is not only an appropriate place to incorporate discussion of visual thinking, but that visual thinking has long been unnecessarily omitted to the detriment of students’ development.
The work of Arnheim suggests that limiting writing students to verbal messages, without accompanying visual information, limits their ability to convey their perceptions. Further, the work of Gombrich suggests that limiting writing students to classical page design not only limits the possible perceptions they can convey, but also limits the possible perceptions they generate. We suggest that instruction should include attention to the elements of page design. Students should be encouraged to try out alternate formats in their writing, and they should be guided to an understanding of how the visual dimension provides the scene for the verbal message, and even how the visual dimension conveys information on its own. Above all, teachers can develop a sense of play and excitement in their students concerning the visual and its possibilities, an attitude that encourages freedom beyond the confines of the single-column page. Yet we should also remind our students that these choices are not without risk. If they choose, for example, to introduce innovation in a highly traditional format, such as a lab report, they may be seen as rejecting the tradition and culture through which the format developed. And such rejection may produce negative reactions from readers within that culture.

When we wrote the initial version of this essay, for example, we were careful to present it in a traditional format, using innovation only in the choice of type font because we feared rejection from editors confined to traditional formats of academic journals. In other words, we were interested more in ensuring that our message be heard than in challenging traditional formats through innovation.

In our reaction to innovation as teachers, we should also be prepared to receive the unexpected and nontraditional and to make an effort to understand their purpose. As teachers we must be prepared to reassess our own ideas of text, confronting such basic questions as the relationship between words and graphics and whether design can, in some instances, take the place of words altogether (as in a magnificent brochure on endangered species prepared by the state of Colorado which allows photographs of animals to take the place of extended descriptions).

In sum, we suggest that students undertake visual experimentation self consciously, that they be aware of the risks involved as well as the rewards. That such potential risks exist should not be seen as a reason to avoid using the visual altogether; rather, we should encourage our students to explore the possibilities judiciously.

When we are met with the objections that these matters are more appropriately addressed in technical and professional writing classes, we are reminded of the various controversies that arose regarding materials throughout the history of art. Is photography really art? Should painters use acrylic paint that dries faster but is less durable, or should painting restrict itself to oil? Should painters project images from photographs onto their canvases as a starting place, or should they be limited to what they can reproduce in drawing? Should the art world embrace computer design and graphics? Ultimately, however, these controversies have been resolved by the passage of time because artists in their search for ways to convey their perceptions successfully make use of all available materials; and traditional oil painting and traditional sculpture have not been lost in the process. Our stu-
Students live in a world of rich visual and verbal interaction. They have access through electronic publishing to the dynamics of the visual and the verbal in their own writing. To deny entrance of these materials into all writing classes means the loss of potential development in using and understanding these intriguing resources. Further, if we deny entrance of the visual, we run the risk of widening the gap between what is practiced in the world in which students will ultimately live and work and what is done in the writing class. If we are to develop writers capable of knowing the value and pleasure of writing, as well as capable of meeting the demands of any number of writing situations, we cannot afford that risk.

References


