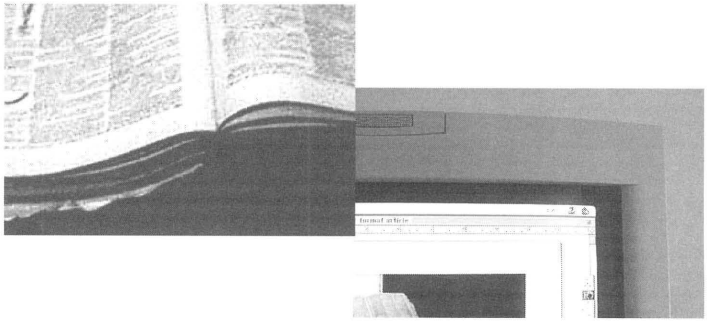
advisory board



Dis[appearances]: Representational Strategies and Operational Needs in Codexspace and Screenspace

Katie Salen and Sharyn O'Mara

The transition from book to screen requires careful analytical comparison. The structure of the book cannot be simply translated to the space of the screen without consideration of new spatial practices afforded by hypermedia architexture. Unlike the book which appears whole and physically delimited, hypermedia embraces a realm of disappearances where issues of form and navigation undergo redefinition. By asking what concepts are shared by digital and printed document alike we are led to an investigation of possible models for understanding their differences and exploring the implications of the digital document as a textscape.

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Visible Language 31.3
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A man sets out on a journey to a place he has never been before. Another man comes back. A man comes to a place that has no name, that has no landmarks to tell him where he is. Another man decides to come back. A man writes letters from nowhere, from the white space that has opened up in his mind. — Paul Auster

disappearances

They say that you should write from what you know. We are book designers and, as such, we know about books. And text and typography, paper and ink, space. White space, page space, book space. *Communication by document.* We are also writers, so we know something of beginnings and endings and ways of getting from one to the other. *Journeys. Landscapes of connection. Time.* As designers and writers in the age of hypermedia we are acutely aware of disappearances: of the object, of control, of space and of time, of place and of possession, of edges. Center and periphery no longer visible as distinct concepts. Suburban sprawl meets the tidy grid. *To drift.* Appearance and reappearance but in a different anyplace that you have, in fact, never left.

definitions

representational plane the formal anatomy of an information structure as articulated through materials of expression: typography, paper, ink, pixels, light, etc.

operational plane spatial practices or navigational strategies implied by any given information structure: alphabet order, index, menu, button, etc.

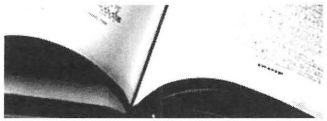
document the combination of information and structure.

In addressing this realm of disappearances several fundamental questions are raised as to the ways in which a document—whether printed or digital—is experienced as a form or idea, an object or encounter. Vastly different in their approach to the articulation of form (referred to here as the *representational plane*), and navigation (the *operational plane*), each offers varied experiences of form, of information and of roles for navigation. As such, consideration must be given to the shifting relationship between a document's representational qualities and its operational, or navigational, needs. In asking what concepts are shared by digital and printed document alike we are led to an investigation of possible models for understanding their similarities and differences: the digital document—temporal, shared and infinitely adaptable, and the printed document—quantifiable, fixed and beloved for its sense of permanence, possession and personal encounter.

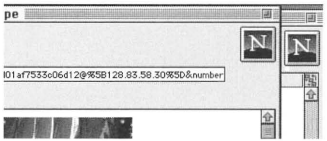
digital space
printed document
codexspace
screenspace
digital document
monitor:
apparatus for viewing;
separate from the digital
document as an
information structure
print space
book:
information and
apparatus for
viewing share
same physical
structure

1
representational planes and operational strategies

Rumor has it that a web year is currently at three months and new media are unveiled daily, largely reinforcing the notion that the printed document is a traditional means of *communication through document.* Perhaps the first written documents were inscribed by the Babylonians on clay 2,000 or more years before the Christian era, followed by papyrus rolls, scrolls and eventually the codex in the mid-fifteenth century with the advent of moveable type and the printed text. Taken in the evolutionary context of its predecessors, the printed book is actually of relatively recent origin (Diehl, I-3), though we are not likely to consider it a new invention in communication. However, the printed book has been the primary method of recording and transmitting information for centuries, and our experience of the textscape has been almost exclusively book-based. While there is a tendency in many digital applications to utilize metaphors about the book in an attempt to better convey information through digital means, often this serves only to remind the viewer of what the digital document is not; for example, the use of the term *webpage* to represent an entire body of work, or the use of a *bookmark* as a digital locating device. We, on the other hand, are interested in what the digital document *is,* and what it might be. Therefore, we reference the book as a primary printed document from which to ponder the matter of the digital document. [*see figure 1*]



Holding a book, we evaluate its physicality: size; weight; proportion; scale; quality of paper, printing, images, typography. These materials of expression provide some clues to the potential of the text; while material aspects are never foolproof indicators of the quality of the content within, they do begin to establish a sense of the identity of the object. Flipping through the book, we can deduce almost immediately: how lengthy is the text? how dense? how well annotated, illustrated and organized? In short, we can gather a brief sense of what is to come based upon information revealed by the physical structure of the printed book.



The matter of the book is not difficult to isolate; we have been familiar with these materials since early childhood, and likely, they are largely transparent to us now. When at first we seek to define the material aspects of the digital document, our hands inevitably come up empty.

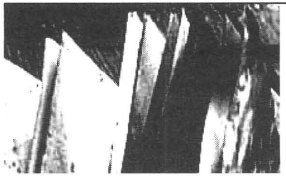
We begin by turning our attention to a discussion of the *operational plane* as a way of exploring the relationship between a document's representational strategies and its operational needs. First, it must be understood that the anatomy, or representational plane, of the document contributes to a reader's overall experience by providing an identity, or precise concept of form, for the document. The term *identity* as it is used here refers to the the reader's recognition of a specific relationship between the anatomy of a document (as articulated through visual form), and the organizing principle structuring that form. Following, the term *form* refers not only to ideas about the visual representation of information within a document but to concepts surrounding the organizing structures that determine the way in which the information can be navigated. When a document's form gains identity (again, through cognitive recognition on the part of the reader) its value as an *object* is established. This concept of "object" refers not to any specific delineation of physical edges but to an acknowledged integrity between the information and the description of its manipulation.

The organizational structure of the book is generally known to the literate viewer, and has influenced how we present and perceive information. While slight sequential variations may occur in the textblock, there exists a generally accepted set of component parts which help to orient the viewer to the text. This linear progression leads the viewer to and through the information along a well-planned path. While one can certainly diverge by skipping pages, the closed system of the printed book offers a largely singular experience: the reader, and the environment may change, but the printed text itself remains intact and unaltered with the exception of any reader's notations.

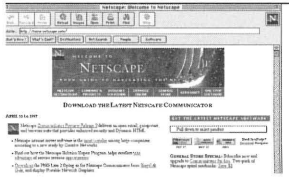
The size of this document is not felt with the hand, but is measured in the weightlessness of bits and bytes. Based on the preferences of the viewer its proportion and scale are flexible. The visual quality of the document depends upon many variables: the speed at which it can be rendered, the resolution of the text and images it contains, the color, brightness and contrast of the screen on which it is viewed, and the quality of detail as it is rendered in pixels.

The first structural aspect of the book as object is the cover. Added historically as protection to extend the life of the textblock, it has evolved into a sophisticated graphic and typographic advertisement for the contents. Inside covers offer a teaser of the information contained within, followed by the traditional false-title, or bastard-title page, which offered protection to the subsequent full-title page in an early era of the codex when the printer simply wrapped the gathered sections of the textblock and sold it unbound; only the wealthy could afford the bindery. Copyright information, including ISBN numbers and publishing information, is located on the verso of the title page. Preceding the table of contents, which provides the reader with a method of locating particular subject matter or topics within the larger body of the text by specifying a page number, can be any combination of dedication; foreword: a short introduction offered by an authority in the field of the book's topic, or knowledgeable about the author; preface: the author's statement of reason for writing the book; and acknowledgments, which are often combined with the preface. The introduction may be either preceded or followed by a half-title page, which simply repeats the bastard-title. The body of text follows in a clear hierarchy; divided into chapters, it is punctuated with many visual cues to guide the reader along this linear path: heads and subheads, folios, running feet, pull-quotes, footnotes and annotations.

Figure 1



In the printed document the information and the apparatus for viewing share the same physical structure; as a result, the economics of print production are tied directly to the boundaries of the physical object.

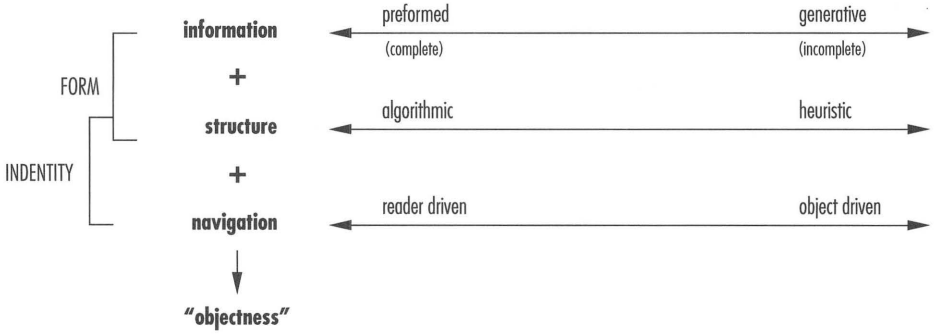


In the digital document the information must be considered separately from the apparatus on which it is viewed; the economics of production are tied to the viewing apparatus but do not constrain the information in the same way that the printed document is limited by the cost of physical materials.

PRINTED DOCUMENT	document driven	user driven	[*textscape*]	document driven	user driven	DIGITAL DOCUMENT
Limited by economics of print production.	•		**color**	•	•	Document specified; constraints of monitor affect document specifications; user may change within limitations of technology or choose not to render.
	•		**images**	•	•	
Typography is specified based upon content, page size, margin size and density of text. The economics of print production result in limitations in the potential page size, number of pages and typographic layout which directly affect the form of the printed document.	•		**typeface**	•	•	Document specified; user may change within limitations of technology or default to other configurations which may alter the readability and meaning of the text.
	•		**type size**	•	•	
	•		**leading**	•	•	
	•		**margins**	•	•	
	•		**line length**	•	•	
	•		**type orientation [FL, etc]**	•	•	
Document guides through both sequence and operational cues; user determines the sequence [may skip chapters or pages] and pacing through intention. Hierarchy is spatially based.	•	•	**sequence**	•	•	Document provides visual cues in the form of user interface; user determines sequence and pacing based upon intent. Hierarchy is temporally based.
	•	•	**pacing**	•	•	

Second, such a discussion assumes as its basic premise the recognition of the document as an articulated object in the mind of the reader. What are the conditions and criteria that make this recognition possible? Here we will argue that one quality of "objectness" in the mind of the viewer is dependent upon his/her perceptions of the relative **completeness** or **incompleteness** of the document as determined by potential changes in form and information. A second quality can be found in the type of organization, or set of devices for organizing behavior by structuring the document. A third quality can be seen in the navigational role assumed by the reader as s/he experiences the document. Later we will outline several models for navigation as determined by the relationship between identity (form) and constraint (structure). (*See figure 2*).

figure 2



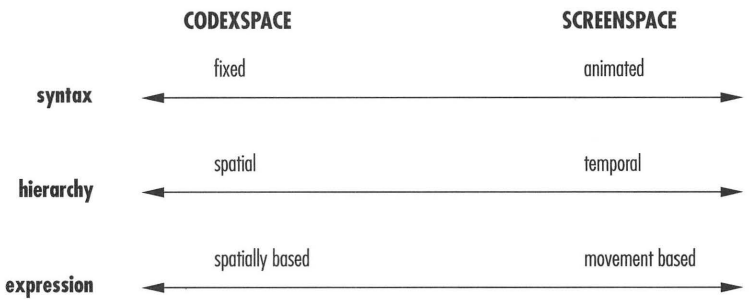
Yet, in order to proceed, further inquiry is needed. Initially we must ask whether or not our working definition of "document" requires the assumption of a closed system where information that may not be fixed in either space or time is known, at least, to be "available" within the system. In such a scenario information is **preformed**: all available data is established prior to use. Certainly printed documents require such a condition: the technology of printing establishes this constraint, encouraging the reader to understand the object as "complete" and the system as closed. Many digital documents, despite the flexibility of their form and structure, must be understood as having similarly closed systems: our ability to make decisions about what we want to see, how we see it, and when we see it, does not change the fact that the information available to a reader remains the same; its information boundaries are pre-established. This is not to say that the *meaning* of the document (either printed or digital) is closed or fixed, as multiple interpretations could stem from a recombination of the available information through changes in form and spatial organization. An example of this can be seen in Li Dynasty poetry in China, where extremely brief poems were constructed using words with multiple meanings, or hinge words. In such a system, there are relatively few sounds, but there is the possibility for many tonal and contextual variations on them. Variations in the aural representation of the selected hinge words result in a cascade of possible interpretations. The job of the singer is to tease out these hidden resonances by variations in pitch and stress and placement. When this is done well, the conflict and sympathy between different meanings create a dazzling moiré of shifting messages (Eno, 386).

This type of poetry provides an example of an object whose information boundaries are pre-established but whose identity, or concept of form, is highly variable. One of the more profound characteristics of the digital document *is* its physical malleability. A single textscape can be experi-

enced in an infinite variety of locations, in an infinite array of configurations. Here the materials of expression are highly malleable and, in most cases, the digital object will become whatever you want it to be. Because there is a fundamental separation between the digital document as object and the apparatus upon which this object eventually will be viewed, the form of the document exists *in potentu*—no singular form exists.

In addition to differing degrees of change in form and information the operational space of printed and digital documents differ broadly in conception (*figure 3*). Differences in the relative fixity of signs within the space, as well as subsequent changes in navigational strategies, suggest that the space of the page has little to do with the space of the screen. Codexspace, or the space of a printed document, has traditionally been tied to paper, a composing surface that is defined by its ability to take on a particular and repeatable size. As a fixed space, it functions as a textual counterpart, both surface and void, margin, letterspace and edge; as readers we can careen down the gutter, haul ourselves up the incline, sweep across the line and around to the next page.

figure 3



Situating visual signs within a hierarchy that is navigable spatially but fixed physically, codexspace provides rhythm and pacing for the reader.[1] Such a hierarchy utilizes spatial cues to aid in an understanding of where the document (as closed object) begins and ends, situating a reader in a particular place. The sense of closure or completeness can be extremely physical as even graphically manipulated signs are unable to escape the immutability of the final composition. As Walter Ong (133) 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."

While codexspace offers many visible spatial boundaries that facilitate navigation through the document, what indicators of boundaries[2] exist within a digital document? In what ways might these devices allow the reader to orient themselves in relation to an object that does not possess a single "structure" that can be transposed or transported to and from another medium and is notable for the appearance-disappearance of signifiers? (Kac, 191) Because of its tie to cyberspace, screenspace assumes an infinite blackspace as a real world equivalent to the universe: an unending, non-quantifiable field. Conceptually it can be understood as an open, potentially immersive volume—a manifestation of Borges' Library of Babel—where all possible words, all possible configurations (both visual and verbal) exist, in potential, below the surface of the screen. Because the spatial boundaries of a digital document are not defined by the edges of a physical surface, we, as readers, are offered no clues as to the nature of the dimension it occupies. Recognized as the "in-between" of here and there, the transformative space of the digital document presents a wander-ground, an architecture of joinery and kinetics situating sites of encounter within an evolving information structure. Embedded layers, rendered invisible through binary opposition,

1

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 and spatial manipulations create effects with both visual and aural dimensions.

2

await excavation. Information and its surface share identical materials of expression. To impose form simply requires calling code to the digital surface through the textual naming of a file. Here naming and renaming becomes a ritual of evocation, a disappearing act with reader as magician.

BOUNDARIES	CODEXSPACE boundaries are tied to object	SCREENSPACE boundaries are tied to apparatus for viewing
	page size	screen size
	book size [in inches]	document size [in k or MB]
	print quality	pixel resolution
	ink	light
	paper	screen
	cost of color	no cost of color
	printed typography	bitmapped typography
	binding	programming / coding
	static structure	malleable structure
	information: closed system	information: open or closed system
	navigation: spatial	navigation: temporal
	information is static; reader + environment may change	information, reader + environment may change
	permanent	flexible

2
spatial practices

Paul Saffo has written that,

> "It is not content but context that will matter most a decade or so from now. The scarce resource will not be stuff, but point of view. . . The future belongs to neither the conduit nor content players, but those who control the filtering, searching and sense-making tools we will rely on to navigate. . . (*Wired,* March 1994, "It's the Context, Stupid.")

Navigation or reading involves constructing a coherent relation between text and context, between object and the spatial practice necessary to engage that object. The root Latin word, *texere,* means "to weave" and the context provides an array of peripheral elements that, woven together with the text, make a document.[3] Moreover, navigation is an attempt to engage space in a visceral, meaningful way.[4] The concept of the cybernaut, (cyber coming from the Greek *kyber,* meaning to steer, while "naut" means ship), provides a model for thinking about possible roles, or spatial practices. Defined on the one hand by the relationship between the identity (form) and constraint (structure) at play in either the printed or digital document, and on the other by the motives of the reader (what they are reading and why), the assumed navigational role plays a significant part in determining a reader's experience (*figure 4*).

figure 4

identity and constraint

INFORMATION + STRUCTURE + NAVIGATION = EXPERIENCE

motives of the reader

3

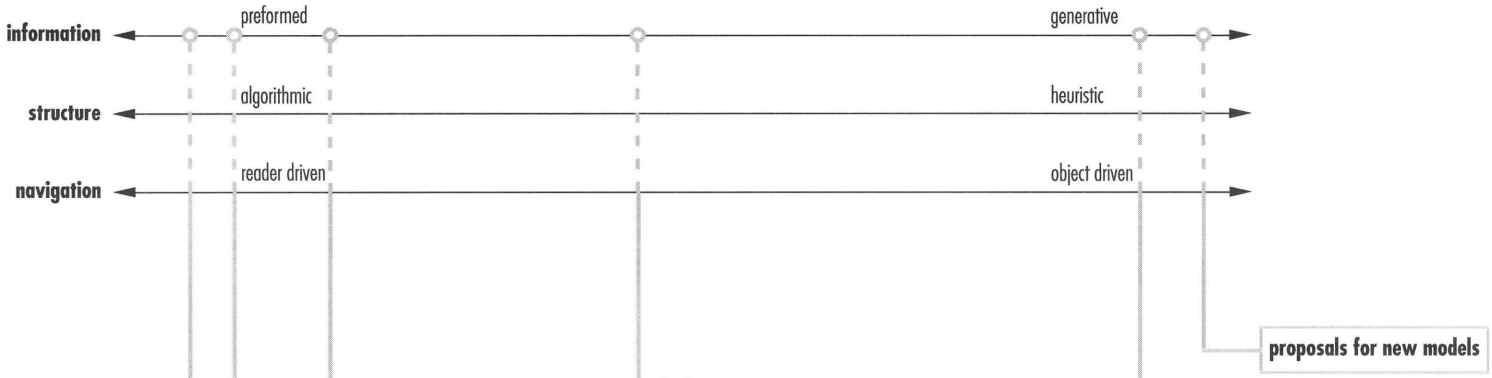
What is the nature of the role that form manipulation as an indicator of context plays in the interpretation of a text? Taking a cue from e. e. cummings, we can say that visual distortions may be visual in nature but non-visual in function; they may function to regulate the speed of the reader's comprehension of words and sentences; or they may be used to create, reinforce or violate rhythmic ideas. (Marks, 117). In each case there is a desire to direct the reader's experience.

4

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. From this we can conclude that the meaning of a text does not depend solely on the concreteness of words or on their referential quality. Meaning is directed by the relationship between form and navigation as experienced by the reader.

Earlier reference was made to the following diagram. Initially it was presented to describe a framework of parallel continuums within which a printed or digital document must be considered. Here it is *re*presented in the context of several proposed navigational strategies for reading. Five such roles are introduced for consideration, each representative of a hybridization of possible relationships. It should be understood that positioning of these roles within the framework are general, rather than specific, and are intended as points of departure for further research and discussion beyond the scope of this article.



drifter

Any inquiry into spatial practices and means of navigation must take into account the issue of control, of chance or choice, of **random** or choreographed encounter. The above mentioned roles rely on a pattern of movement originating from within the desires of the navigator. But what of a spatial practice reliant upon the **desires of the system?** In answer to this we propose the role of **drifter,** a reader at the mercy of the ebbs and flows of the textscape, who imposes no will in the formulation of the textual encounter. Paul Auster has written beautifully of this concept: "On the surface this motion seems random. But such randomness does not, in itself, preclude a meaning. Or if meaning is not quite the word for it, then say the drift, or a consistent sense of what is happening, even as it changes, **moment by moment**" (Auster, 104). Instead of reading *for a meaning,* the reader gains meaning by opening themselves up to the *experience* of the text.

surfer

A third proposal for the role of the cybernaut is that of **surfer**: a role, like that of nomad, which relies heavily on the powers of selection and intuitive, free-associating movement. Yet unlike the nomad, the surfer does not see herself as "the primary motor" for her movements. Instead her "actions emerge from the dynamics of the water." Sanford Kwinter, in writing about dynamic systems, notes that "Waves create temporary and formal intensities, **fluid streams,** in which the surfer employs intuition (to be one with the wave) and innovation (to explore unknown realms). The landscape (waves) has to be transformed to make the situation convulse, oscillate and break" (Chaplin, 411). Seeking the most workable lines—the "gaps" or "cuts"—trajectories that are never twice the same, the surfer works to harness the energy of the system. Euphoria is found in the ride itself, in the exhilaration of the kinetic encounter, completion and arrival tolerated only as **platforms for imminent departure.**

nomad

Following Deleuze and Guattari, we can discuss the role of cybernaut as **nomad,** alluding to a **fluidity of movement** in navigation that is a spatial practice requiring "a walking pace to ensure the full emotive power of the experience." (Chaplin, 409) While the implications "of being a pedestrian" on the information superhighway may be cause for alarm, as a model for the negotiation of a space often characterized by serendipitous encounter it is highly appropriate. In search of a constructive and motivating force, the nomad embraces the multitudinous opportunities afforded, desiring the quiddity of the **happened-upon connection.** We walk and we wander, choosing our steps carefully, slowly engaging the scope of the document. Further, as a spatial practice nomadic navigation references the Situationists' idea of the derivé where to pursue the derivé was ". . .to give yourself up to the promises of the city, allowing signs to divert, to 'detourn,' your steps, and then to divert those signs yourself, forcing them to give up routes that never existed before. . . "(Marcus, 170). In the derivé "each situation would be an 'ambient mileau' for a 'game of events'; each would change its setting, and allow itself to be changed by it" (Marcus, 164).

thief

The role of **thief** invites the cybernaut into the spatial practice already occupied by hackers and junkies: theft, addiction and violation of the system. Participating in a choreography of appropriation and adrenaline in which a system is infiltrated and dismantled, the thief **steals and recombines,** achieving a degree of **intertextuality** dating back to manuscript culture. "Manuscript culture had taken intertextuality for granted. Still tied to the commonplace tradition of the old oral world, it deliberately created texts out of other texts, borrowing, adapting, sharing the common, originally oral, formulas and themes. . ." (Ong, 133). In addition, the formulation of cybernaut-as-thief implements the Situationist idea of detournment (the theft of aesthetic artifacts from their contexts and their diversion into context's of one's own devise) giving the textscape up to free-play and recombination. With the thief, stealth and invisibility grant undenied access to the power of **overlapping spatial discourse.**

chameleon

Each of the above four models are dependent upon closed systems of information where information is preformed and the concept of organization primarily algorithmic. In such cases the document experience is **reader driven.** While variation in a digital document can occur in both form and navigation (changes in sequence, ordering of information) variation in a printed document is possible only in the context of navigation, with each equally dependent upon the motives of the reader. The role of **chameleon,** with its emphasis on **adaptability** in both form and behavior, offers a very different model for navigation predicated on the ability to shape and adjust its own action within the context of a **self-evolving system.** Instead of remaining outside of the system—asserting control based on a known structure—the chameleon is an **integrated** component, monitoring (and adjusting) its own behavior in relation to the alterations in its surroundings. Such a model situates change as the catalyst for navigation and the experience of the text becomes a journey of possibility.

3
anti-space

William Mitchell has noted that space in a digital document is ". . . fundamentally anti-spatial. It is ambient nowhere in particular but everywhere at once" (Mitchell, 30). A reader's inability to situate this anti-space in a particular place has a marked effect on the conception and experience of boundaries and limits of the document. Consequently, the choreography of reading (*figure 5*) changes from a movement *across* space to a movement *through* time where space is used for both distinction and distance between nodes of information. This distinction must be understood in terms of the time taken to travel from one node to another. Because the distinguishing characteristic of the digital document is its linking navigation structure, time as the measure of distance travelled replaces any notions of space as a bounding entity.

In addition, the indeterminate space of a digital document cannot be conceived as a facilitator of rhythm and pacing in the same way that codexspace can. Where codexspace depends upon spatial organization for hierarchy,[5] screenspace looks to time as the ultimate determinate of value. While codexspace is characterized by its role in controlling movement *through* and *across* the page, the mobile signifying system of the digital document "extend[s] its expressive power to encompass time, since the words are not fixed upon a surface but rather float in space" (Kac, 190). Whitespace turns blackhole and, as a material of expression, contributes little to the definition of the topography of the document. Instead, this role is assumed by an architecture of hyperlinks that may exist in the same visual space but in different moments in time.

5

See Johanna Drucker's excellent discussion of visual and literary materiality in *The Visible Word: Experimental Typography and Modern Art, 1909–1923*. Drucker cites Stephen Mallarmé's experimental poem *A Throw of the Dice* as a precedent for new ways of thinking about space as a system of signification. Mallarmé manipulated both spatial and typographic form, paying close attention to visual features, spatial distribution, and its capacity to organize the text into a hierarchized figural order.

Eduardo Kac, in his research with holopoetry, refers to this embedded architecture as quadri-dimensional, integrating dynamically the three dimensions of space with the added dimension of time. No longer dependent upon available square footage this new anti-spatial architecture leads to changes in our perception of the organizing factors of the document, challenging the metaphor of a document's physical topography—a metaphor that has been encouraged by a reliance upon the accepted, but crude, convention of window-based software where opaque panels of information are layered on top of each other like a deck of cards. Rooted in a print-based assumption that the visual presentation of information occurs in the form of a stable syntax, such a metaphor ignores the dynamic and volatile quality of digital information. Data in digital documents doesn't rest quietly on the surface. Instead signifiers "transform themselves, move in three-dimensional space, change in color and meaning, coalesce and disappear"(Kac, 190). Kac refers to these visual signs as *fluid* or as a ". . . sign that changes its overall visual configuration in time, therefore escaping the constancy of meaning a printed sign would have. Fluid signs are time-reversible, which means that the transformations can flow from pole to pole as the beholder wishes, and they can also become smaller compositional units in much larger texts, in which each fluid sign will be connected to other fluid signs through a discontinuous syntax" (Kac, 194).

But what about the object that has the potential to continuously change not only its representation in form but the very information being represented? Such an object relies on a series of generators of new, unpreplanned material and poses a model not possible in a printed document. This **generative** model of information (*figure 6*) has an identity that is adaptable to the conditions of the system so that there is an inextricable connection between form and information where form is an absolute condition of the system. Several examples of such a model currently exist: screen savers such as

Jean Tantra's *Stained Glass*[6] and Greg Jalbert's *Bliss;*[7] games such as Sim Earth and Sim City; as well as the graphic work of William Latham and Karl Sims, both of which have invented programs for creating complex and beautiful three-dimensional "organisms" (Eno, 308). Unlike an object whose identity rests in the manipulation of preformed, and therefore complete, information, documents whose information is self-evolving and responsive to the conditions of the data environment lack an interest in the precise nature of the object. These objects have the ability to grow limitlessly, while at the same time enable the reader to limit the range of this growth. Limitations are imposed by the reader based on their desired goals. We can visualize this as a "scale of orientations" where, on the left hand is placed a label "tending to subdue variety," and on the right, "tending to encourage variety" (Ashby, 1964). While the extreme polarities of this scale provide interesting edges locating hybrid points along the scale is probably more fruitful. Instead of trying to specify the limitations in full detail, readers specify them only somewhat.

6

Jean Tantra designed a screensaver called Stained Glass that evolves by "digesting" and reconfiguring bits of itself.

7

Bliss is a computer program invented by Greg Jalbert which enables a user to construct generators of visual patterns which unfold over time on the computer screen. The program offers control over types of mark, treatments of images, positioning on screen and color evolution (Eno, 308).

figure 6

preformed

(preformed chunks of material through which the user navigates)

CONTENT all available information is established prior to its use

NAVIGATION user has control over which material is seen and in what order

CONSTRAINT (structure) algorithmic: "a comprehensive set of instructions for reaching a known goal"

IDENTITY a precise concept of form (or identity, or goal, or direction) already exists, and it is taken for granted that this concept is static or singular

Navigation leads change

tending to encourage variety

tending to subdue variety

generative

(a series of generators of new, unpreplanned material over which the user can exert various degrees of control)

CONTENT variable and self-evolving

NAVIGATION contains built-in mechanisms for monitoring (and adjusting) its own behavior in relation to the alterations in its surroundings

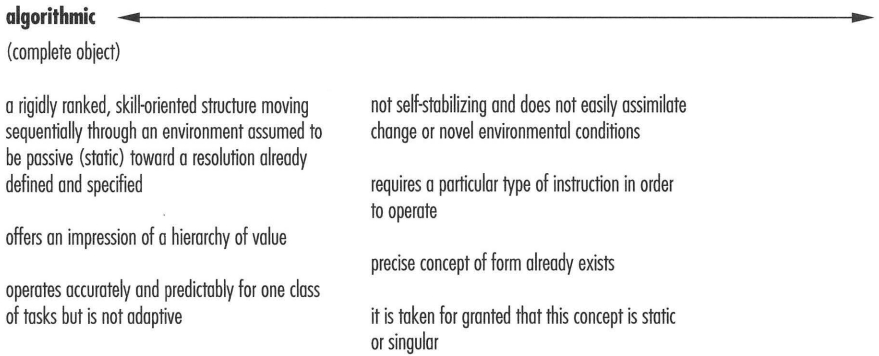
CONSTRAINT (structure) heuristic: "a set of instructions for searching out an unknown goal by exploration, which continuously or repeatably evaluates progress according to some known criterion"

IDENTITY a responsive network of subsystems capable of autonomous behavior, that regards the irregularities of the environment as a set of opportunities around which it will shape and adjust its own identity

Change leads navigation

The most relevant aspect of this alternative organizational strategy lies not in a generative system's ability to create unique output, but in the apparent change in the overall perception of structure by the user and his/her subsequent change in navigational strategy. Previously we suggested that although print (as well as many digital) documents allow for variety in representation they do not allow for variety in information. Most CD ROMS and web sites fit this category in which a reader's interactivity is limited to a simple rearrangement of cataloged information. A reader approaches such an object with an understanding that they will be moving through an environment assumed to be closed (again, not in terms of meaning but in terms of available information) with a precise concept of form already in place. Cybernetics describes such a organizational structure as **algorithmic** (*figure 7*) or as a "rigidly ranked, skill-oriented structure moving through an environment assumed to be passive (static) toward a resolution already defined and specified" (Beer, 69). Such a structure operates predictably for one set of tasks but is not adaptive and does not easily assimilate change. Moreover, a precise concept of form exists prior to use and it is taken for granted that this concept is static or singular.

figure 7
continuum of
organizational structures



In opposition to this concept of organization is one that typifies certain organic systems and is based on an assumption of change rather than stasis; of probability rather than certainty. Unlike algorithmic structure such a concept does not typically offer instructions toward highly specific results, and hence does not specify wholly repeatable configurations of information. We can consider this system of organization to rely on a kind of improvisational or empirical composition that ". . . aims to set in motion a system of organization that will generate unique (that is, not necessarily repeatable) outputs, but that, at that same time, seeks to limit the range of these outputs. This is a tendency toward a 'class of goals' rather than a particular goal," (Eno, 335) and should in no way be understood as "goalless" or indeterminate behavior.

The kind of instruction necessary to engage a generative information hierarchy is known as **heuristic** (*figure 7*): "a set of instructions for searching out an unknown goal by exploration, which continuously or repeatedly evaluates progress according to some known criterion" (Beer, 77). Objects whose structure of navigation is heuristically-based require a representational strategy that is similarly adaptive—a natural condition of a digital document. Furthermore, a reader operating within this structure must have a responsive, rather than preplanned, navigational strategy and will be unable to determine a precise concept of form prior to engagement. The result is that the object tends to lead navigation—as conditions of one change, so do the conditions of the other. Another way to think about this is in terms of a constantly changing point of view—a navigational strategy sympathetic to changes in context.

4
conclusion

As designers of both printed and digital documents we must work within the field of potential changes in both syntax and meaning. Having variable control over how the object will be seen, or read, means there is a similar loss of control over what the object will eventually become, especially if we argue that there is an inherent relationship between the form of an object and its meaning. So how does this adaptability contribute to our understanding of the relationship between representational strategies and operational needs, especially in the context of the digital object? We end up designing for potential configurations rather than for any singular object or site of encounter. Muriel Cooper has written that "Design skills have been honed over centuries for the organization of information in the static territory of the printed page. Now designers must contend with information arriving continuously from sources beyond their immediate or ultimate control" (Abrams, 53). As concepts about the role of context in the development of intelligent hierarchies continue to evolve so will ideas about form and content. Navigational and organizational models such as those touched upon here can, perhaps, provide new approaches and ways of managing material that embraces the realm of disappearances.

References

Abrams, Janet. 1994. "Muriel Cooper and the Visible Language Workshop." *I.D. Magazine*, September/October, 53.

Ashby, W. Ross. 1964. *An Introduction to Cybernetics*. London: University Paperbacks, reprint.

Auster, Paul. 1988. "Facing the Music." *Disappearances. Selected Poems*. Woodstock, New York: Overlook Press, 104.

Beer, Stafford. 1972. *Brain of the Firm: The Managerial Cybernetics of Organization*. London: Allen Lane, 69.

Diehl, Edith. 1980. *Bookbinding: Its Background and Technique*. New York: Dover, 1-3.

Chaplin, Sarah. 1995. "Desire Lines and Mercurial Tendencies. Resisting and Embracing the Possibilities for Digital Architecture. *Leonardo*, 28:5.

Eno, Brian. 1996. *A Year with Swollen Appendices: Brian Eno's Diary*. London: Faber and Faber Ltd.

Kac, Eduardo. 1995. "Holopoetry." *Visible Language*, 30:2, 184 - 213.

Marcus, Greil. 1989. *Lipstick Traces: A Secret History of the Twentieth Century*. Cambridge, Massachusetts: Harvard University Press, 170, 164.

Marks, Barry A. 1964. *E.E. Cummings*. New York: Twayne Publishers, 117.

Mitchell, William. 1994. "The Electronic Agora." *Any*, October/November, 30.

Ong, Walter. 1982. *Orality and Literacy: The Technologizing of the Word*. London: Routledge, 133.

Saffo, Paul. 1994. "It's the Context, Stupid." *Wired*, March.

York, R.A. 1989. "Mallarmé and Apollinaire: The Unpunctuated text." *Visible Language*, 23:1, 45-62.

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Early Greek Typography in Milan

A Historical Note on a New Greek Typeface

In the early history of Greek typography, the famous Aldine Greeks all too soon superseded other interesting attempts at adapting the Greek alphabet to the new medium of movable type. Among the centers of printing Greek in Italy, Milan deserves particular attention. Here in 1476, the first book to be printed entirely in Greek initiated a series of typefaces that were both suitable for the new medium and genuinely Greek, since they were based on contemporary penmanship. So it is to be welcomed that a modern revival of one of these typefaces has been created under the name of "Milan Greek."

The coincidence of the fall of Constantinople in 1453 and the invention of movable type by Johann Gutenberg in Mainz only two years later is remarkable, although, of course, the two epoch-making events are entirely independent. But the waves unleashed by them soon came to a fascinating and highly productive interference in Italy, midway between Germany and Greece, where the influx of Greek scholars from Constantinople and the new German technology brought about an enormous flourishing of classical studies. Hence it was necessary to apply the new technology, which had been developed for Latin, to Greek texts as well; but once the principle was invented this was only a minor step. The problem could be, and in fact was, resolved very soon — although it is not as trivial as it might seem at first sight, given the different and more complicated requirements of the Greek language, both aesthetically and technically.

From an aesthetical perspective the main problem was that the history of Greek handwriting had been much richer and more diverse than that of Latin writing. In particular, there was no equivalent in Greek of the Carolingian minuscule, which enjoyed general appreciation in Italy as a very beautiful and "classical" style, and which at the same time was appropriate for the new medium because it almost entirely lacked ligatures. On the contrary, most Greek hands of the time were extremely rich in ligatures, which caused one technical problem, the other major problem being the accents. There were various ways of tackling these two technical difficulties, and there were very different ideas of what a beautifully printed Greek text should look like. Hence the history of Greek typography in the

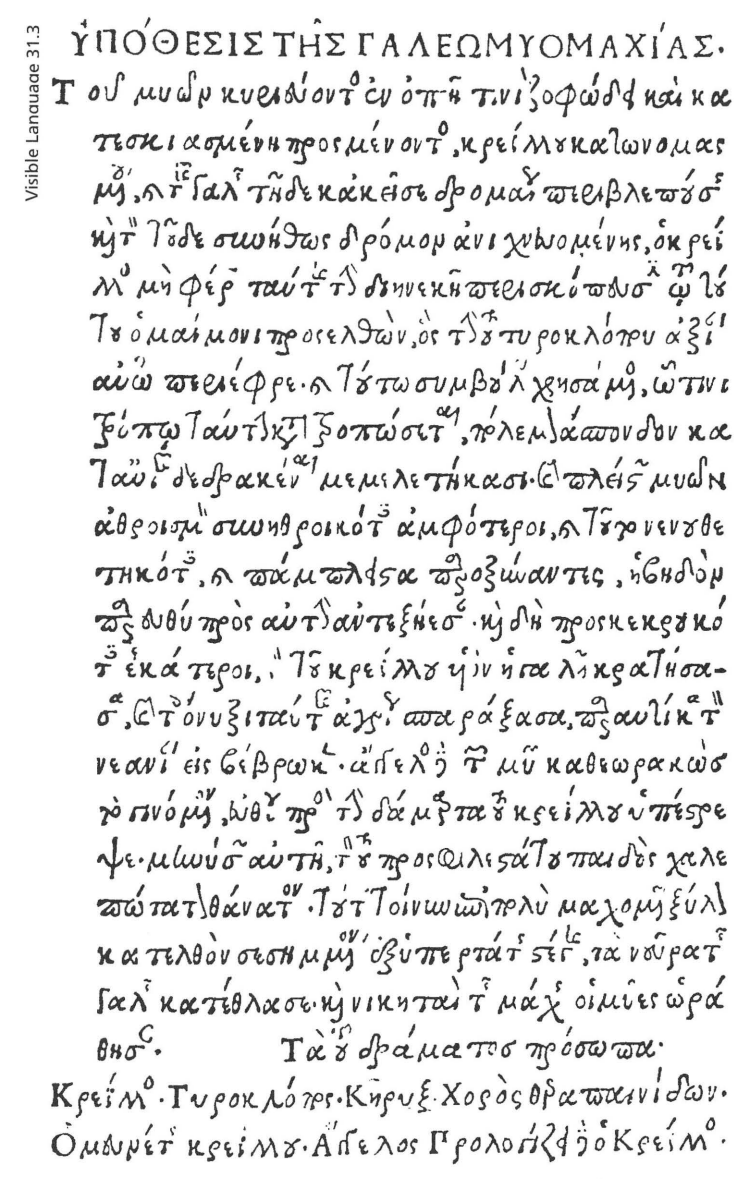
fifteenth century is surprisingly multifarious. However, the diversity disappeared very quickly at the beginning of the sixteenth century, when one particular style, the Aldine Greeks, came to universal recognition and served as a model for the entire further development (*see figure 1*). In fact, these types have influenced the history of Greek typography for several centuries, and to a certain extent even up to this day.

The quality of the Aldine Greeks has been the subject of some controversy. Robert Proctor in his magisterial *Printing of Greek in the Fifteenth Century* (1900) dismissed them devastatingly,[1] but the distinguished typographer Giovanni Mardersteig (1964) and, more recently, Nicolas Barker in his detailed study on the subject (1985) have tried to do them more justice.[2] But even if one acknowledges the merits of these Greek typefaces, it certainly is to be regretted that one particular tradition monopolized the market — a fact which can only be explained by the exceptional success of Aldus' (or rather Griffo's) Latin types and by the smallness of the market for Greek type in general. And it cannot be doubted that the history of imitations and follow-ons brought to light in particular the drawbacks of the Aldine tradition. Since a large quantity of punches was required for the ligatures, printing Greek was expensive. Where these expenses were avoided, compromises had to be made, which often resulted in a deplorable loss of quality and beauty.

Therefore, it is understandable that the Aldine Greek typefaces, as well as the development of Greek typography before and independently of them, have attracted considerable scholarly attention in our

[1] As a consequence of Aldus' achievement "it became a point of honour (and of business) with every printer of Greek books who wished to be in the running, to follow the fashion by basing his type on the common writing hand of the day, the chief characteristics of which, whether written or adapted to the needs of the printer, are an absence of voluminous curves, the endless variety in the size and form of the letters, and an incredible complexity of abbreviation which makes the deciphering of a Greek text no small difficulty to the inexperienced. These faults are of course hardened and emphasized by their translation from the freedom of handwriting into the fixed mould of type. The loss of dignity is not compensated by the unrestrained freedom; the vigorous beauty of form so striking in the older types is replaced by letters which at their best are ungraceful, and all but the most careful hands degenerate into wiry thinness and nerveless imbecility." Proctor, 16 f., cf. also 102 f.

[2] "Per i nostri occhi ... quest'ultimo carattere greco [sc. il greco 4, carattere Sofocle] di Griffo è non solo incantevole e superiore a tutti i precedenti, ma eccelle entro queste serie come la sua più felice creazione." Mardersteig, 148: "in technical terms it is clear that Francesco Griffo achieved a masterpiece fully equal to the forms he gave to roman and italic type." Barker, 102. (Griffo was Aldus' punchcutter, who also cut the famous type for Pietro Bembo's *De Aetna*.) On Aldus Manutius in general cf. also Stanton (with further bibliography).


ΥΠΟΘΕΣΙΣ ΤΗΣ ΓΑΛΕΩΜΥΟΜΑΧΙΑΣ.

Κρεί Μ. Γυροκλόπης. Κῆρυξ. Χορὸς θρασυαινίδων.
Ὀμυμέτ. κρεί Μ. Ἄγελος Γρολοπίζης. Ὁ Κρεί Μ.

Figure 1

Aldus Manutius, Greek 1 (1494)

century. The dating, the historical background, and especially the writing hand that served as a model, have been cleared up for many Greek prints of the time; samples of all prints of some significance are available in good reproductions.[3] In view of these favorable presuppositions, it is all the more surprising that the history of Latin typography in our century which is characterized by so many successful revivals of fifteenth century typefaces of great vigor and beauty (e. g. Bembo, Dante, Jenson, Centaur) is almost entirely unparalleled in Greek. The only example of such a revival that has come to some practical significance is "New Hellenic" (1927) by Victor Scholderer, a very beautiful typeface which is based on a pre-Aldine Venetian font of 1492.[4]

This font, as well as the models for two or three other modern revivals which have never become as popular as "New Hellenic," belong to a group which Proctor called the "Graeco-Latin class,"[5] because they were originally intended for the insertion of more or less short passages of Greek into a Latin text. Unsurprisingly, this class was the first to be developed, Greek letters being printed for the first time as early as 1465 (in an edition of Lactantius by C. Sweynheym and A. Pannartz in Subiaco, the first surviving book ever printed in Italy!).[6] The advantages of these faces are the lack of ligatures, which made them appropriate for the new medium, and the fact that they matched the aesthetical standards of similar Latin typefaces. However, the problem is that they often reflect what one particular scholar — or, even worse, one printer — thought to be Greek rather than an actual Greek handwriting of past or present. At a time when direct

[3] Cf. Proctor, Scholderer and Barker.

[4] The issue of the face was accompanied by an exhibition in the British Museum and a study of the history of Greek typography by V. Scholderer. In this book, a sample of the font can be found (after figure 60, for the historical model cf. p. 6 and figure 12); in the second edition of 1995 there is also a historical note on the type by J. H. Bowman (57-63). There are two digitized versions, one by The Monotype Corporation, and one by The Greek Font Society ("GFS Neohellenic").

[5] Proctor, 13 f., cf. also 83-93 with detailed descriptions of the actual prints.

[6] Cf. Proctor, 26 f.; Scholderer, 1 f. and figure 2. In the same year, possibly even slightly earlier than the Lactantius, there was also a first instance of Greek printing in Germany, in the Cicero printed by Peter Schöffer at Mainz; cf. Proctor, 24-26; Scholderer, figure 1. Its Greek letters, however, are very crude.

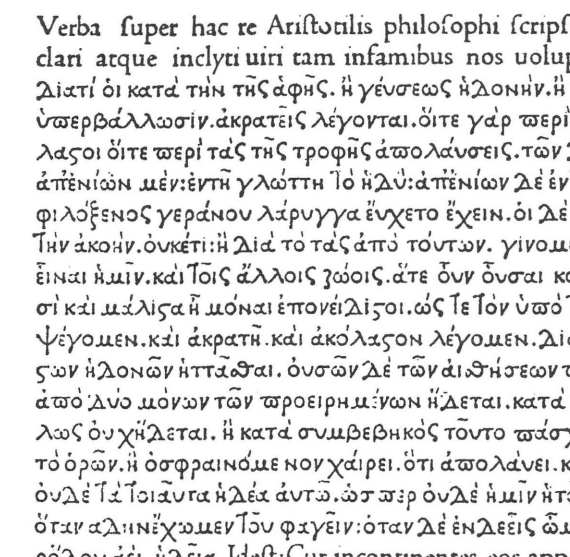
contact with the genuine Greek tradition had become possible and to a certain extent even fashionable, this approach was bound to fail — even if the alternative was more expensive. The Graeco-Latin tradition of printing Greek lead to an early climax of considerable beauty in the typeface of the famous Nicolas Jenson of 1472 (*see figure 2*),[7] but subsequently the focus shifted to a different method. Contemporary Greek writing hands were sought which were both beautiful and appropriate for the new technology (and, of course, readable). Here, Venice had the natural advantage of being the traditional gate to the Byzantine east, and hence a prime center of classical studies. As mentioned above, *la Serenissima* was eventually victorious thanks to Aldus Manutius.

But at an earlier stage Milan and Florence, too, played an important role. These two cities were also centers of Renaissance culture and attracted a number of Greek scholars. In particular, Milan developed a tradition of printing Greek which had a significant potential. The *Epitome* (a short handbook of grammar) by Konstantinos Laskaris, printed in Milan in 1476 (*see figure 3*), was not only the first book to be printed entirely in Greek, but it was also the first instance of a Greek typeface designed after the handwriting of a contemporary Greek scholar.[8] The type was by Demetrios Damilas, a Greek himself, who, however, did not choose his own handwriting as a model, but the hand of a compatriot, presumably the Constantinopolitan Michael Apostolis, because it suited his needs better: it had fewer ligatures, and was more easily readable, without lacking the vigor and vitality of genuine Greek

[7] Cf. Proctor, 33 and figure 8 (32); Scholderer, 2 f. and figure 7; Barker, 24 f. and figure 2 (23). Barker, 8, expressed himself against Proctor's attribution of the Jenson type to the Graeco-Roman class, arguing that "it is clearly based on the writing of an able and native Greek calligrapher" (24). In absence of clear evidence for this assertion (the example given in n. 3 is not sufficient) I would rather admit that Proctor's nomenclature is not quite appropriate, but there can be little doubt about the close relationship of the Jenson type with the earlier representatives of this class. Almost simultaneously with Jenson, another very similar type by Wendelin of Speyer appeared, cf. Proctor, 30 f. The Jenson/Speyer fonts have found several followers, some of which, it is true, have been used for continuous Greek typesetting. The most famous and most beautiful of them is the Complutensian polyglot of 1514 (Proctor, plate 24; Scholderer, figure 24), which Proctor considered to be beautiful enough to base his own "Otter type" on it (Scholderer, figure 59). However, it could be shown that there is no evidence whatever for the old manuscript tradition, upon which it is allegedly based; cf. Woody, 144 f.

[8] In particular Proctor, 51-58 (and plate 1), deals with the font at some length, giving a very penetrating and detailed description of it; cf. also Scholderer, 3 f. and figure 8; for Barker see following note. Layton, 70-78 discusses the claim of the book to be the first of its kind.

[9] The identification of the scribe has been brought forward by Barker, 30 f. His hypothesis gains some plausibility from the juxtaposition of Apostolis's handwriting and the Milan print (28 f.); on Apostolis cf. also 14.



Verba ſuper hac re Ariſtotilis philoſophi ſcripſi : ut uel auctoritas clari atque inclyti uiri tam infamibus nos uoluptatibus deterreret. διατί οἱ κατὰ τὴν τῆς ἁφῆς. ἢ γένσεως ἡδονὴν. ἢ γιγνομένην. οὐ ἂν ὑπερβάλλωσιν. ἀκρατεῖς λέγονται. ὅιτε γὰρ περὶ τὰ ἀφροδίσια ἀκόλαζοι ὅιτε περί τὰς τῆς τροφῆς ἀπολάυσεις. τῶν δε κατὰ τὴν τροφήν. ἀπὲνίων μέν: ἐντῆ γλώττη τὸ ἡδύ: ἀπὲνίων δὲ ἐν τῶ λάρυγγι. διὸ καὶ φιλόξενος γεράνου λάρυγγα ἔνχετο ἔχειν. οἱ δὲ κατα τὴν ὄψιν: καὶ τὴν ἀκοὴν. οὐκέτι: ἢ διὰ τὸ τὰς ἀπὸ τούτων. γινομένας ἡδονάς. κοινὰς εἶναι ἡμῖν. καὶ τοῖς ἄλλοις ζώοις. ἅτε οὖν ὄυσαι κοιναὶ ἀτιμότατα εἰσὶ καὶ μάλιζα ἢ μόναι ἐπονείδιζοι. ὡς τε τὸν ὑπὸ τοῦτον ἠττώμενον ψέγομεν. καὶ ἀκρατῆ. καὶ ἀκόλαζον λέγομεν. διὰ τὸ ὑπὸ τῶν χειρίζων ἡδονῶν ἠττᾶσθαι. ὀυσῶν δὲ τῶν αἰσθήσεων πέντε. τὰ ἄλλα ζῶα ἀπὸ δύο μόνων τῶν προειρημένων ἥδεται. κατὰ δὲ τὰς ἄλλας. ἢ ὅλως οὐχ ἥδεται. ἢ κατὰ συμβεβηκὸς τοῦτο πάσχει. ὁρῶν μὲν γὰρ τὸ ὁρῶν. ἢ ὀσφραινόμε νον χάιρει. ὅτι ἀπολαύει. καὶ ὅ ταν πληρωθῆ. οὐδὲ τὰ τοιαῦτα ἡδέα ἀντῶ. ὡσ περ οὐδὲ ἡμῖν ἢ τοῦ ταρίχους ὀδμη ὅταν ἀπηνέχωμεν τοῦ φαγεῖν: ὁταν δὲ ἐνδεεῖς ὦμεν ἡδεῖα. ἢ δὲ τοῦ ρόδου ἀεὶ ἡδεῖα. Ideſt: Cur incontinentes eos appellare ſolemus : qui

Figure 2

Nicolas Jenson (1472)

writing.[9] Only a few years later this type was further developed by Bonus Accursius who had a new font cut for his edition of Theocritus and Hesiod which was similar to the first one, but was more regular in weight, had even fewer ligatures, a somewhat larger x-height and, at the same time, slightly narrower letter-spacing, so that a more harmonious overall impression was achieved.[10] A further step was taken in 1492 when Demetrios Chalkondyles, one of the leading Greek scholars of the time, came from Florence to Milan. He initiated the *editio princeps* of Isocrates' speeches, which appeared in 1493. According to the colophon of the book, the type was by Errikos the German and Sebastianos from Pontremolo.[11] Nothing is known of the latter, but there can be little doubt that the former

[10] Cf. Proctor, 61-63 and plate 2; Scholderer, 4 and figure 9; Barker, 35 and figure 7 (32). Barker assumes the type to be inspired by the handwriting of a member of the Gregoropoulos family, see figure 8 (33).

[11] Cf. Proctor, 70 f. (where also the text of the colophon is given) and plate 4; Scholderer, 4 and figure 11; Barker, 35 and figure 9 (34).

ΠΕΡΙ ΠΑΘΩΝ ΤΩΝ ΛΕΞΕΩΝ ΕΚ ΤΩΝ ΤΟΥ ΓΡΑΜΜΑΤΙΚΟΥ ΤΡΥΦΩΝΟϹ.

Τ ὰ τῶν λέξεων πάθη ἁπλᾶ μὲν δύο γενικώτατα διῃρῆται πολλοῖς τε καὶ ποικίλοις· καὶ τοῦ μὲν πολλοῦ ἥδη ἔμβαλε καὶ πλεονασμός· τοῦ δὲ ποικίλου μετάθεσις καὶ μετάληψις· ἀμφοτέρων δὲ ὁμοῦ συνελθόντων τμῆσις γίνεται· ἔστι δὲ ὡς ἐν κεφαλαίῳ ἁπλᾶ πάθη πέντε· πλεονασμός· ἔμβαλε· μετάθεσις· μετάληψις· τμῆσις·

Πλεονασμός·

Πλεονασμὸς μέν ἐστι πρόσθετος χρόνων ἢ χρόνου στοιχείων ἢ στοιχείου· Ἔμβαλε·

Ἔμβαλε δέ ἐστι πρόσθετον χρόνου ἢ χρόνων στοιχείου ἢ στοιχείων ἐλάττωσις· Μετάθεσις·

Μετάθεσις δέ ἐστι στοιχείου μετακίνησις ἐκτὸς διαστάσεως ἐφ᾽ ἑτέρας στάσεως οἷον δαρτὰ ἀντὶ δρατὰ· κραδία ἀντὶ καρδία· καρτὸς ἀντὶ κρατός· καλοῦνται δὲ καὶ ἐναλλαγὴς καὶ ὑπέρθεσις·

Μετάληψις·

Μετάληψις δέ ἐστι στοιχείου μετακίνησις· οἷον ἡ πεδαγὸς ἀντὶ ἀπεδαγὸς· ἀμητότης ἀντὶ ἀμοτότης· Τμῆσις·

Τμῆσις δέ ἐστι συλλέτου λόγου ἀφαίρεσις εἰς δύο λέξεις· οἷον ἀκρόπολις ἀντὶ ἀκροπόλισ·

Τούτων δὲ τῶν πέντε παθῶν τὰ μὲν εἰς ἥδη τε-

Figure 3
Demetrios Damilas
(1476)

is Heinrich Schinzenzeler, whose relative Ulrich was a leading printer in Milan at the time. The type is a slight improvement on the previous one (new variants of some letters, e.g., *gamma, zeta,* final *sigma*) and it is relatively heavy — an impression which is intensified by the small amount of space between the lines and the heavy inking of this print.

The Milan tradition, as it is preserved in these three examples, is attractive for two reasons. Firstly, it is more genuinely Greek than the Graeco-Latin group, because it is based on contemporary Greek penmanship; secondly it is more readable and more appropriate for the medium of movable type than the Aldine typefaces, because it is able to dispense with many ligatures without looking boring or clumsy — an effect which is achieved by different variants of many letters which are used according to the context. It has to be admitted that the Aldine Greeks look more graceful at first (and probably also at second) sight. But it has to be asked whether the Milan Greeks do not offer an enormous potential thanks to the above mentioned advantages, which could not be properly developed because they were superseded by the Venetians.

These qualities make the Milan tradition particularly suitable for a modern revival. Such a revival has now been attempted by the skilled London typographer Ralph Hancock. His new typeface "Milan Greek" is based on the last of the above mentioned prints, the Isocrates of 1493 (*see figure 4*). Despite its historic character it is primarily intended as a usable and readable font for high quality computer typesetting of ancient as well as modern Greek. Therefore, a

Milan Greek © Ralph Hancock 1996

Α Β Γ Δ Ε Ζ Η Θ Ι Κ Λ Μ Ν Ξ Ο Π Ρ Σ Τ Υ Φ Χ Ψ Ω

α β γ δ ε ζ η θ ι κ λ μ ν ξ ο π ρ σ ς τ υ φ χ ψ ω

0 1 2 3 4 5 6 7 8 9 ϝ ϡ ϙ ϛ ※ ‘ ’ ‚ ‛ ‿ ·· ‘‘ ’’ ‚‚ ‛‛ ‿‿ ·· ‘‘‘ ’’’ ‚‚‚ ‛‛‛

ά ὰ ᾶ ἄ ἂ ἆ ᾄ ᾂ ᾆ ᾴ ῄ ῲ ῂ ῇ ῳ ῃ ῷ , 〈 〉 ( ) [ ] { } | , . · ; - ? ! “ ”

The historical original (Milan 1493)

γὰρ ἅπαντα παρῆν αὐτῇ πράττειν. ἀλλ᾽ ἐκ τούτων μὲν πολλαὶ κατηγορίαι κατ᾽ αὐτῆς γεγόνασιν. ἐκ δὲ τῆς ἐν μαραθῶνι μάχης καὶ σαλαμῖνι ναυμαχίας καὶ μάλιστα ὅτι τὴν αὐ τῶν ἐξέλιπον ὑπὲρ τῆς τῶν ἑλλήνων σωτηρίας, ἅπαντες αὐτὴν ἐγκωμιάζουσιν. τὴν δ᾽ αὐτὴν γνώμην καὶ περὶ λακεδαιμονίων ἔχουσι. καὶ γὰρ ἐκείνων ἄγανται μᾶλλον τὴν ἧτταν

Figure 4
Milan Greek
(1996)

compromise between fidelity to the historical original and contemporary standards had to be found. It is surprising how little of the actual shapes of the letters had to be altered: the two most obvious and significant changes that had to be made are a certain standardization of the highly anarchic alignment of the original (especially the x-height) and a noticeable reduction of weight. Both changes were necessary for technical reasons and for the sake of compatibility with other modern typefaces.

However, the extremely variegated letter widths, and thus much of the vigor of the original could be preserved; hence, *alpha, gamma, lambda, mu, pi, sigma* and *tau* are relatively wide, whereas *epsilon, zeta, iota* and *xi* are quite narrow. Nevertheless, the overall impression is very harmonious, which is achieved by careful letter-spacing and kerning. (The font can be used without kerning, but it profits very much by it.)

Most of the minuscules follow the original closely. Like in many early Greek typefaces, there were different variants of many letters, to match the context and to imitate the liveliness of handwriting; of course, these variants had to be given up, as they would only confuse modern readers. Likewise, it was not sensible to keep the ligatures, which are not too numerous in the Milan print anyway. But in some cases it was possible to choose among the variants of the original the one that is closest to the shape familiar to modern readers (even if it is not necessarily the most common type in the original). This is the case with *alpha, beta, gamma, delta, pi* and *tau*. Only two letters had to be designed entirely afresh, *eta* and *nu*, because they are

too different from the type nowadays in use. The letters *zeta* and *xi* deserve particular mention; they always have been a headache for Greek typographers. Here, quite a satisfactory solution has been found. The *zeta* follows the original closely with its somewhat unusual but perfectly recognizable left-bowing top, whereas the *xi* standardizes the chaotic (and not very beautiful) zigzag in such a way that the basic structure is preserved and a more harmonious match with the rest of the alphabet is achieved. The *xi* also makes the connection with the upper case *Xi* (one of the most peculiar letters of the Greek alphabet) plausible. The majuscules in general have no precedents in the Isocrates print of 1493, because the font of Schinzenzeler and Pontremolo had only minuscules. So, the upper case of "Milan Greek" is basically "invented" to match the lower case, with occasional reminiscences of the majuscules in the earlier Milan fonts, which however are rather clumsy.

The new font also contains a beautiful series of matching old style figures, and, of course, all the accents and episema necessary for properly printing classical Greek (*digamma, sampi, koppa,* asterisk, c-shaped *sigma,* different types of brackets).[12]

Like the original, which belongs to a family that was used for the first book to be printed entirely in Greek, the new typeface seems to be particularly suitable for continuous Greek typesetting, but of course it can also be used for insertions in Latin text: in that case it looks best when combined with one of the humanist faces like Bembo or Jenson. It is to be hoped that efforts like this will find followers: modern computer technology

[12] For further details and to obtain the font, contact Ralph Hancock, 17 Queen's Gate Place, London SW7 5NY, United Kingdom, email hancock@dircon.co.uk

makes it so much easier for everybody to obtain typographically satisfactory results. In practice, however, it is to be observed that most such printed material is of lower quality than that which has been conventionally produced. This applies in particular to the printing of Greek, presumably because this is and always has been a relatively small market. Therefore, a certain idealism is required – an idealism which classical scholars have often had in the past, and which the beauty of the Greek alphabet certainly deserves.

References

Barker, Nicolas. 1992. *Aldus Manutius and the Development of Greek Script & Type in the Fifteenth Century.* New York: Fordham University Press.

Layton, Evro. 1979. "The First Printed Greek Book." *Journal of the Hellenic Diaspora,* 5:4, 63-79.

Mardersteig, Giovanni. 1988. "Aldo Manuzio e i caratteri di Francesco Griffo da Bologna." *Scritti sulla teoria dei caratteri e della tipografia.* Milan: Edizioni il Polifilo, 107-158, (first published in *Studi di bibliografia e storia in onore di T. De Marinis, III,* Verona 1964).

Proctor, Robert. 1900. *The Printing of Greek in the Fifteenth Century.* Oxford: Oxford University Press.

Scholderer, Victor. 1995. *Greek Printing Types 1465-1927.* Thessaloniki: Typophilia (1st edition 1927).

Stanton, Ralph. 1996. "Aldus Pius Manutius. Publisher of Renaissance Venice." http://www.lib.sfu.ca/proj/aldus.htm

Woody, Kennerly M. 1971. "A Note on the Greek Fonts of the Complutensian Polyglot." *The Papers of the Bibliographical Society of America,* 65, 143-149.

Martin Wallraff spends most of his days dealing with old books — very often early prints of Greek Church fathers, because his research focuses on the question of how these texts were read in Renaissance Europe. He graduated from Heidelberg University in 1993; since then he has done research in Cambridge, Jerusalem and Rome. At present, he teaches Church history at the University of Bonn. His recent publications include articles on late antiquity as well as early modern history and a monograph on the fifth-century Church historian Socrates.

Acknowledgement
The large characters throughout the article are Milan Greek by permission of their designer Ralph Hancock.

What a communication designer is may still be best defined by what he or she does and
has done. This qualification does little to clarify any understanding about how we might
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Visible Language, 31:1
Gibson, 300-325

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Digital technology enables designers to physically create almost anything imaginable, yet students still need to critically consider and evaluate their communication design in the context of metaphoric, ethical, historical and paradigmatic perception. Students must engage in processes of critical analysis with regard to their work. They must be taught to evolve contextually based criteria regarding why they accept what they accept, and why they reject what they reject. Without this background, they are slaves to technology.

An example of a studio project designed to help students: 1) utilize the digital environment to organize typography and images that represent the socio-political context their solutions were required to identify, and 2) explore the empirical variables that help their readers to access and effectively contemplate the content presented by their text is discussed.

Michael Gibson

Teaching Critical Analytical Methods in the Digital Typography Classroom

communication design roles in transition

Communication designers entering the profession in the next five years or so will have to facilitate communications between and interact with more people outside their discipline than any previous generation of design practitioners. Their careers will demand that they imbue themselves with the wisdom necessary to consider the ramifications of their decisions from many different peoples' viewpoints without losing sight of the communication objectives they set out to achieve. To do this, they must identify the features of other disciplines that can positively contribute to their work, while they simultaneously apply their unique sensibilities about how readers process and interpret visual information to situations that have not historically called for participation from communication designers.

We possess an array of core competencies that enable us to structure visible words and images so that we can convey meanings between diverse groups of people. The fact that we now use digital technology to enhance our ability to synthesize and evaluate our ideas (and the structures that signify them) should enable us to more pro-actively shape our contribution to the information society of the future. However, this can only be achieved if we teach future designers how to use the technology available to them to augment

and assist their decision making processes, and to help them initiate and manage change (as opposed to merely reacting to and implementing it).

What a communication designer is may still be best defined by what he or she does and has done. This qualification does little to clarify any understanding about how we might better identify (and thus better explain to non-designers) the essential nature of our discipline, but it provides us with a very flexible means to prove the value of our work to those who question its significance by allowing us to tailor and apply our unique abilities to organize and convey visual information to their specific concerns. We need to exploit the lack of a central definition of communication design (or graphic design) as a means to describe the different ways we can collaborate with people from almost any discipline to help them communicate their ideas and objectives to their intended audiences and to each other. The significance of what we do needs to be presented in terms of how our participation in a given project can facilitate and enhance understanding across disciplines. If we cannot do this, and we cannot educate our students to do this, we will continue to foster an ever-growing misperception about what communication designers do and what our collective future might be. We must actually be able to design on the computers we use to execute our work, and so must we teach our students.

We're increasingly viewed as mere information 'filters'[1] who fit our work into social, cultural and commercial contexts that have been defined for us by others who are perhaps less technologically

[1]From a lecture by Graphic Design Education Association (GDEA) president Anne Bush at the GDEA international conference in Edmonton, Alberta, Canada on August 11, 1995.

competent but more strategically minded than we are. Understanding how to apply photographic filters and how runarounds and layered text boxes work in page layout programs has tended to supplant knowledge (much less wisdom) regarding how typography might be most effectively structured to first attract a viewer's attention and then clearly and concisely convey the necessary information to that viewer. Students increasingly produce work that reflects a remarkable understanding of how graphics applications software works, and a paucity of understanding regarding how their work should function in society. They don't (or won't) see their work as a means to initiate and manage cultural, political and economic change, to modify and inform public opinion or to help facilitate the process of communication between a given client and a particular audience. Instead of seeing themselves as designers of communication strategies whose decisions may allow others to meaningfully interpret and manage new data, they increasingly limit their responsibilities to the tactical manipulation of technical form. The need to efficiently use graphics applications software and the need to engage in effective critical thinking simultaneously seems to be lost on many students (and many professionals as well). When this type of efficiency wins out over effectiveness, the end users, the audience,

suffer the consequences — they cannot interpret the essential meaning of the information intended for them, which means they didn't feel, they couldn't learn and they weren't able to consent to do whatever the designer's client suggested they do.

classroom example

I recently ran a project in a third-year studio course that required my students to design a paginated publication for a hypothetical exhibition of the so-called "Degenerate Art" exhibition at the Milwaukee Museum of Art. Before they were allowed to begin to explore the issues of page structure, margin proportionality or typographic configuration, they were required to write a two-page criticism of the specific works by an artist of their own choosing that appeared in the show. Their charge was to write from the official Nazi-sanctioned point of view, and condemn the work they'd selected based on Ziegler's and Hitler's criteria as to what constituted bad art. This critical experience became a metaphoric 'starting point' that could help them structure solutions that would generate empathic support from their audience for freedom of artistic expression as they simultaneously communicated the history and historical context of the show (along with logistical information about the show's manifestation in Milwaukee). They were shown how to use master pages, style sheets and image libraries as the physical means to help them explore and organize an extremely diverse array of page designs and typographic structures.

Given both an intellectual orientation and a digital craft basis, they were then encouraged to duplicate their initial page structures several

Figures 1 and 2
Preliminary structural studies combine images and type for the introductory spread. Also shown are preliminary studies of the diagram depicting the fate of the artists whose work appeared in the exhibition. These were presented at the initial process critique at the beginning of week two.
Students:
B. Kaminski
C. Guizetti

times and then change their margins and the proportions of their page architecture.

Placement, alignment and the physical texture of their text and imagery were subject to continuous change. I wanted them to engage in a project that would allow them to use the flexibility of the digital platform to experiment with several design strategies as they worked toward creating their final projects. Encouraged to sketch both inside and outside the computer, to print-out often and then cut up and rearrange the elements in their print-outs and to scan-in and manipulate a wide variety of image material, the students confronted the malleability of the digital context.

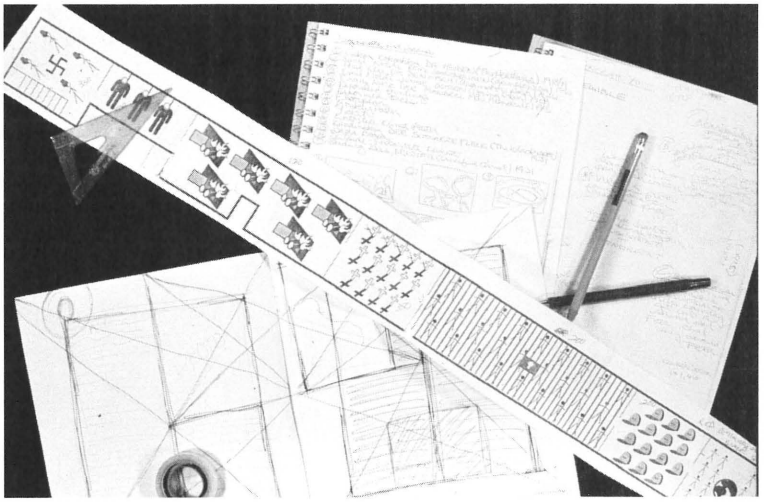


Figure 3
Various digital and hand-rendered developmental sketches for a diagram depicting the fate of the artists whose work appeared in the exhibition. Also shown are hand-rendered layouts for the concluding spread. Presented at the beginning of week three. Student: C. Guizetti

The results of this project that have proven to be of the greatest value for these students have been a sharp increase in their ability to use the computing platform, not only as means to prepare their work for output, but to employ it as a means to gain rhetorical and metaphoric understanding of the elements they must visually order. They were able to effectively manage the process of interpreting the editorial content of their projects while they were attempting to resolve the empirical structures that could effectively present the ideas. Issues such as proportion (in both negative and positive space), asymmetrical balance and leading versus column width were readily dealt with because software structures allowed students to implement changes regarding these issues as soon as they became aware of the need to change them. A greater understanding of the synthesized process of observation, analysis and re-evaluation was realized by most of the students during their work on the Degenerate Art booklets because they were able to effectively deal with the empirical configuration of their typography from page-spread to page-spread as they simultaneously manipulated imagery to create gestalts that conveyed the content of their text. Using the computer enabled them to fluidly diagnose the strengths and weaknesses of not only specific design decisions, but of the decision-making processes that led them to those decisions.

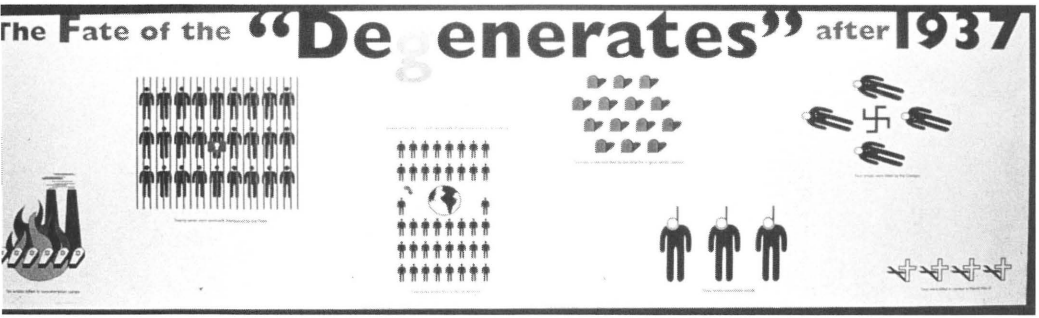


Figure 4
Final manifestation of a fold-out diagram depicting the fate of the artists whose work appeared in the exhibition. Presented at the beginning of week four.
Student:
C. Guizetti

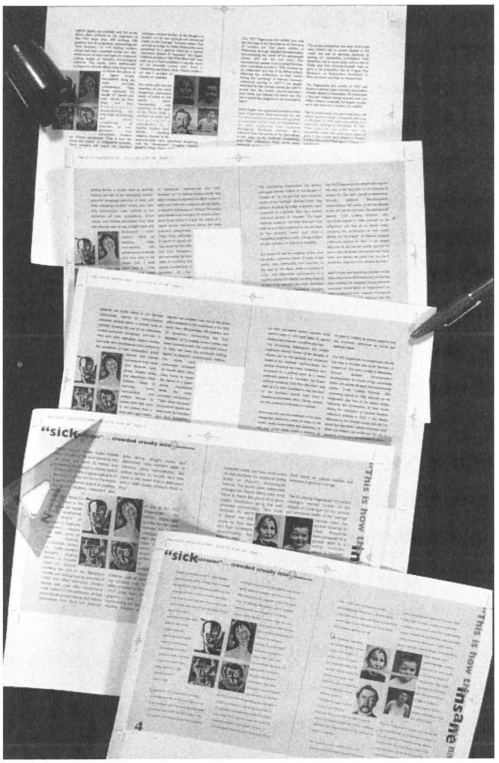


Figure 5
Printouts depicting the effects of various typographic variables on a page-spread describing how the work of the so-called degenerate artists was compared to the work of the insane. Presented at the beginning of week three.
Student:
C. Guizetti

Figure 6
Printouts depicting the effects of various typographic variables on a page-spread describing how the work was displayed in Munich in 1937, and how it was received by the contemporary critical establishment in Europe. Presented at the beginning of week three.
Student:
C. Guizetti

the communication situation changes

The fact that we now refer to ourselves (and hopefully to our students) as visual communication designers might imply that we've come to better understand the general intentionality of the things that we create. Our intended audiences are supposed to be motivated to consent to some sort of identifiable thought or action after they've encountered or "experienced" our work. They're expected to come to some sort of tangible understanding regarding the subject matter presented to them. Sometimes (but not always), this means they actually have to be able to read something. However, just because someone who is not a visual communicator reads does not guarantee that she will understand what she has read. This matters much less for her at the end of the twentieth century than formerly, as long as she has at least been presented with "the information" to begin with. This is due to our fascination with obtaining and possessing information — this has become more important than actually using it as a means to gain new knowledge.

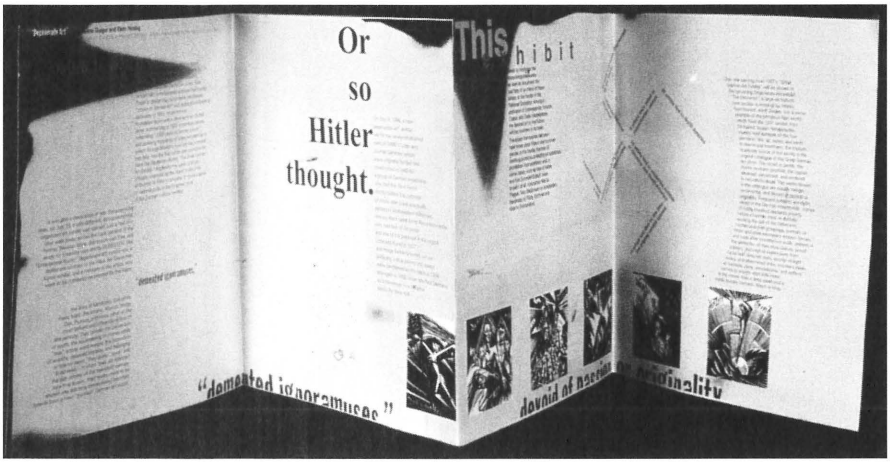


Figure 7
Final presentation of accordion-folded brochure at the end of week four. Student: B. Kaminski

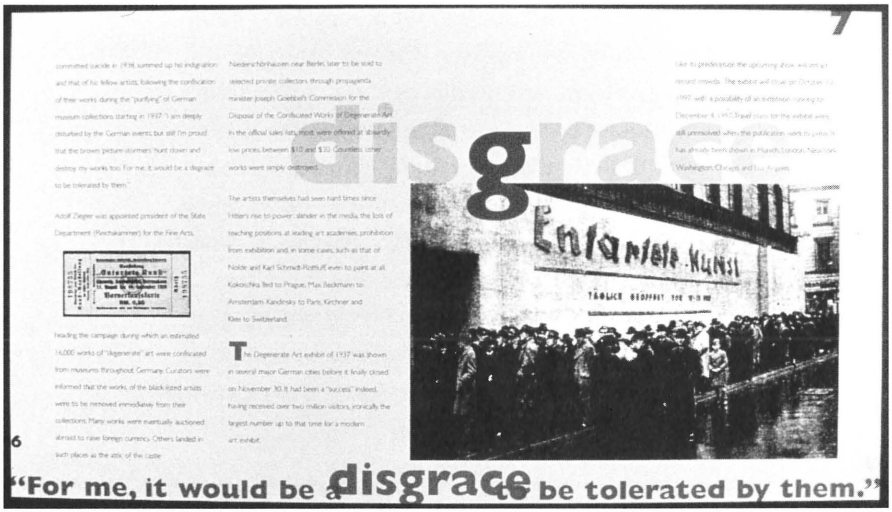
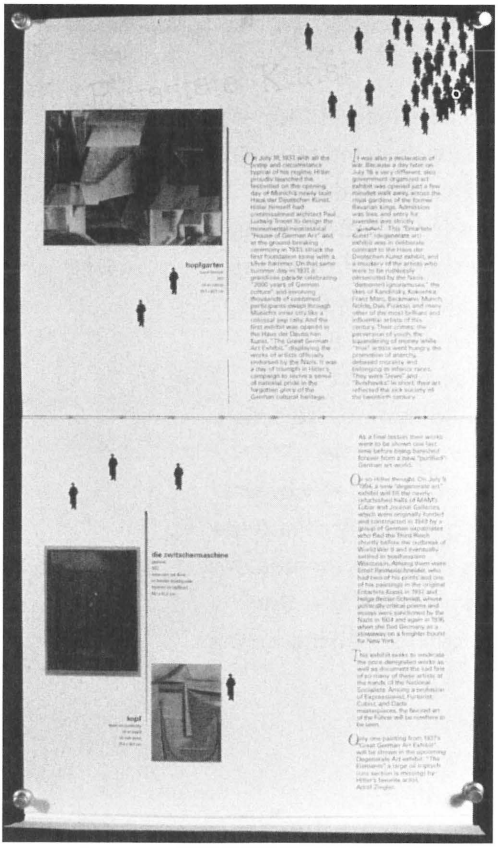


Figure 8
Final presentation of introductory spread at the end of week four.
Student: C. Guizetti

People are often perceived as intelligent if they can accurately recount a store of accumulated facts, or clearly define a set of goals. This perception of intelligence is not a substitute for critical thinking, as it inhibits the desire and the ability of people to interpret, analyze and act upon the facts they've managed to accumulate. This leads to the aforementioned clearly defined goals not being questioned before they are used to motivate action. This is why one of the primary tasks of the communication designer is to enhance her viewer's ability to effectively question the validity of and the implications of the data to be visually presented. Not only the designer needs to think critically — the designer needs to encourage critical thinking on the part of the viewer.

More often than not, we cannot accurately separate fact from data that has been distilled for us by advertiser-driven mass media, but it is comforting to alleviate our sociocultural and political anxieties by pretending that we can. Many communication designers have taken advantage of this burgeoning state of anxiety by creating work that is so technically enthralling, so visually intriguing, that it matters little whether or not the intended audience understood what they were supposed to understand, as long as they enjoyed experiencing the information in a visual context that pleased them.



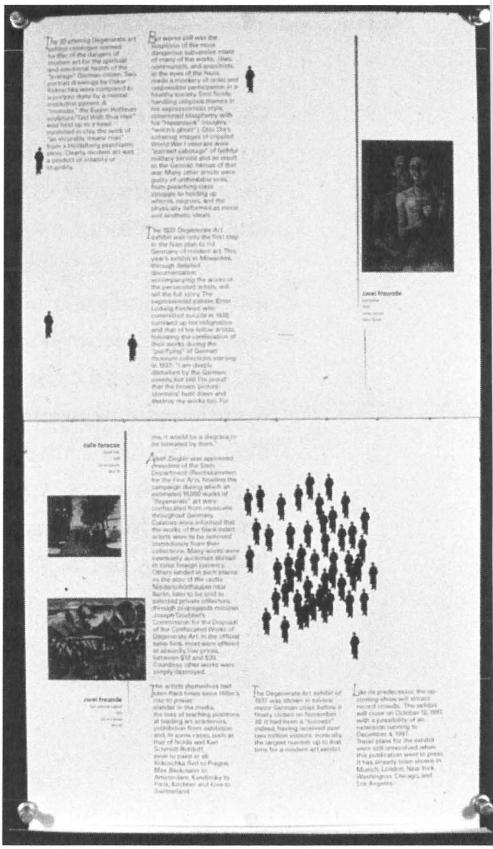


Figure 9 and 10
Final presentation of the first and last spread at the end of week four.
Student:
K. Hertzberg

Computers now allow designers a logistical freedom to manipulate type and imagery that literally did not exist before 1984. You can engage many computer-literate designers and design students in heated discussions concerning exactly when the information-world changed (the date they cite usually coincides with the introduction of a particular version of a piece of software). However, if you really want to engage a roomful of computer-literate designers (especially students) in a debate that could lead to a shouting match, ask them how important it is for the text that they manipulate to be readable, to be legible. Immediately after you pose this question, ask them to define the meanings of the terms readability and legibility.

This will force them to engage in critical thought. Some of them may justify the treatment of text based purely on its visual texture as a reflection of how much more visually literate our society is today than it has been at any other time in our history. Some of them may feel that truly illegible text cannot exist because it is necessarily comprised of letterforms (which are supposed to be inherently legible).[2] "We don't read text typography the way we used to — we read into the overall context that the type appears within."[3] Conversely, some of them might tell you that a competent designer should be able to communicate anything with only one well-structured typeface working within a simple, concise composition.[4] Regardless of their response, they need to be made aware of just how much (or how little) of the content or ideas in their responses are framed within the

[2]Peter Mertens argued that illegibility cannot and therefore does not exist in *Emigre* issue number 15 in 1990: "If they are not legible, then they are not letters...".

[3]Jeffery Keedy stated this in his commentary titled "Graphic Designers Probably Won't Read This... But", which appeared in the book *Emigre: Graphic Design Into the Digital Realm* by Rudy VanderLans and Zuzana Licko with Mary E. Gray, 1994, Van Nostrand Reinhold Company.

[4]David Carson made this statement in a critique of senior-level undergraduate graphic design work at MIAD on November 2, 1995 in response to a question by a student regarding what Carson thought "...were the most important things design students should learn about working with type."

working parameters of a software program or an operating system, or what can be most easily downloaded off of the web. You can't imbue a computer with a critical analysis algorithm, and software provides us only with the physical means to an end. Designers think; computers allow us to do.

> Communication design students need to enter the digital classroom with a thorough understanding of what it means to facilitate communications. People hire us to help them disseminate their ideas or to help their ideas be perceived precisely the way they want them to be perceived. In order to do this, we must ensure that the messages from our clients are clearly understood by the people our clients want to communicate with. Students need to be taught the value of asking why a given message is used in a given context instead of asking only what the message should elementally consist of. Communication designers achieve success only when the bridges they build between gaps of understanding connect at both ends.[5]

If students in digital classrooms are not challenged with structuring typographic systems that support the metaphoric and paradigmatic content — the rhetoric of what has been written — they are easily subjugated by the purely technical demands of whatever software they have learned to use. Learning software requires patience,

[5] I posted this statement from Andrew Tomczik (a design educator at York University in Toronto) in large orange letters on the bulletin board in our computing lab at MIAD at the beginning of last semester. Professor Tomczik made this statement in a lecture he gave at the GDEA international conference in Edmonton on August 12, 1995.

diligence and many hours devoted to learning the specific effects of particular causes. It does not require strategic thinking or any understanding of how human beings recognize and process visual information, nor does it require any cognizance about how we visually navigate (or fail to navigate) through textual information.

It is important to consistently challenge students working in the digital environment with situations in which they must resolve structural issues empirically regarding their usage of typography so that they come to understand both the virtual and the physically tangible effects their structural decisions have on their readers. Target audiences still need to understand what visually excites them — to "get" what the writer and the designer want them to "get" — to extract the relevant information. This process of interpreting meaning "is a genuinely creative act, one that demands judgment, good sense and aesthetic discernment. In the last analysis, it is the reader, not the writer or the designer, who is the ultimate arbiter of the implications of a text."[6] Whether the grid is undermined with subtle variance in baseline structure or fractured letterforms, or used to structure every single spatial relationship on the page, design students must still develop a working understanding of why grids exist, how they have evolved and devolved. Students need to discover how typographic structure can afford the reader the opportunity to engage in whimsy, to be surprised and to challenge and satisfy curiosity *without being annoying or obtuse.* Issues of chronology, placement, size, weight, alignment (or the lack of it), leading and column width still deserve to be

[6]Veronique Vienne, from her article "Soup of the Day" in *Metropolis*, March 1995, 1995, Bellerophon Publications, Inc.

[7]From "Freedom by restrictions: The functionality of visual variables" by Paul Mijksenaar, *Table 12*, 1997, Bureau Mijksenaar.

considered before any steadfast decisions regarding typeface choice is made.[7] Educating students about typography in the digital environment gives them access to an extremely flexible and accessible means with which to explore these issues. Sensitizing our students to the need to design with regard to these structural variables as they engage in manipulating software is one of our primary responsibilities as design educators working in the digital environment.

Here's a question I pose to students in my digital classrooms on a regular basis: is typography rendered illegible if it is presented in a visual environment that makes the viewer work so hard to make any sense out of it that she decides to forego her attempt to process any of the information? Rudy VanderLans (editor of Emigre magazine) says that if you can't read the text, you're probably not part of the intended audience.[8] I say if you can't read the text — you can't read the text.

Many designers who have spent their entire careers manipulating text on a computer think that typographic conventions such as flush left alignment, leading that increases as column widths do and not allowing column widths to exceed two-and-a-half lower-case alphabet lengths exist entirely because of the mechanical limitations of linotype machines. This is only a half-truth: research by James Hartley, Betty Binns, Ruari McLean, Robert Bringhurst and Stanley Morison concerning how humans optically perceive text most effectively also supports these conventions. It is possible for letterforms to be illegibly rendered if they appear in a context

[8]Veronique Vienne, from "Soup of the Day" in *Metropolis*, March 1995, cited the following quote from VanderLans: "People who complain about not being able to read the type are usually not the audience the piece was destined to reach."

where we cannot discern their physical structures clearly, hence the reading situation must be considered.

the legacy of the pre-computer past

For many designers, gaining working knowledge of how to effectively structure typography has been elevated to an almost metaphysical intellectual status that can be likened to the process of being accepted as an acolyte into an exclusive scientific or religious order. Understanding how typography works (and how it doesn't work) is supposed to take years of rigorous investigative study and a great deal of mind-bending and soul searching analysis. Before the introduction of the computer and graphics applications software, one had to be able to specify type and cut and paste galleys and be able to draw well enough to evaluate design decisions before getting type set. "Lack of hand skills" and "poor physical craft" could prohibit advancement in design school, limiting design to nothing more complex than four pages or two colors. One couldn't fake it.

The pre-computer logistics of designing with type and then dealing with its physical implementation were supposed to ensure (among other things) that all of the critical empirical and metaphoric issues in a solution were resolved before energy was invested in

laying it up. This process also helped designers gain a very thorough understanding of the context that the work was being created to fit into, or fulfill or change. The deliberateness of design decision making reflected not only intellectual reasoning, but the sheer tactical challenge of implementing whatever had been decided upon. Designers were responsible for copyfitting, or correctly calculating exactly how much space a given amount of text would occupy when set according to typographic parameters such as the number of characters per pica in a given typeface set in a particular size, leading, column width and column depth. The typesetters who set text into type acted upon specific instructions which had to be very clearly written according to a set of stringent guidelines. Correcting typos meant resetting galleys, and typeset copy that ran too short or too long often meant resetting entire pages, spreads, or sometimes even entire jobs at tremendous cost to both the designer and the client. Mistakes in typesetting weren't just inconvenient — they could wreck the budget for an entire project.

Many communication design educators who are either currently teaching in or administrating undergraduate and graduate programs around the world were educated in an era where stretching or condensing an existing typeface was unthinkable, not entirely because it might be aesthetically unsound, but also because it was logistically so difficult to do. Setting type photographically or in metal required designers to consider the structure of the type they designed in terms of what they could directly, physically manipulate. Adjusting kerning and leading meant

manipulating wooden or metal slugs or cutting slicks apart and pasting them back together again very carefully. Working with type required the patience and the kinesthetic sensibilities of a craftsperson combined with the aesthetic and emotive sensibilities of someone who was very sensitive to the nature of how humans engage in the process of reading. Communication design students were challenged to gain working knowledge of the interdependent relationships between (for example) column width, leading and type size while they simultaneously were challenged with having to master a set of extremely well-honed handskills. This culture bred designers who cherished type as much as they actually used it. They cuckolded typographic understanding close to their hearts so that it might vivify their souls.

the challenge of the computer-based present

Some of them currently guard this understanding from those who know how much RAM they need to run full motion video at 1152 x 870 ppi in Adobe Premiere, but who pronounce "Bodoni" "BoDEEni", and who think Aldus Manutius actually founded the software company that (until its merger with Adobe) bore his name. These new digitally literate threats to modernist order never had to learn how to specify type, and they probably won't ever be chastised for not knowing that Century Schoolbook is an Egyptian font. But they do know how to execute work that they can get to press or into kinetic media, and in a culture that increasingly places not just a monetary but a philosophical premium on efficiency (versus effectiveness), they will continue to thrive regardless of whether or not they evolve

creatively. Students need to be sensitized to the danger of being perceived merely as technological gurus: their sheer competence in the digital environment can dictate a career path that confines them to being the implementers of other people's decisions. Good hackers too often become the reactionary minions of those who understand the cause and effect of well-choreographed propaganda better than the hackers do. Digital technical skills should augment (rather than account for) a designer's ability to allow technical form to signify content. I encourage students in digital classrooms to discuss their design ideas before they talk to me about issues pertinent to the workings of specific software, so that they understand the need to conceive effective solutions *before* they fire up their computers. This ensures that the work they create in the digital environment will be rendered of software, rather than rendered about it.[9]

> No computer is artificially intelligent enough to run cognitive dissonance, critical analysis or gestalt evaluation software. Also, let's not forget that before the onslaught of digital technology, it was impossible to render and evaluate ten completely different typographic configurations for a spread in less than an hour or decrease the leading for the text in an entire document by three-quarters-of-a-point simply by clicking your mouse two or three times. Digital prepress has necessarily (and happily, in my opinion)

[9]Excerpted from a conversation between myself and Ron Bitticks (Professor in Painting at MIAD) in March of 1996. Bitticks referred to a dialogue that took place during a critique of his senior-level students in which he discussed the importance of producing paintings that were of the paint they were painted with, rather than about the paint. I replied that my communication design students often struggled with a similar dilemma regarding the software they used to execute their work.

replaced manual keylining. Getting a duotone to look exactly like you wanted it to (so that your well-considered metaphor would be even more apparent) used to be a guessing game, a crap-shoot with the dice loaded against you. It is now possible to tint the most minute surface areas within an image in almost any array of hues. (So-called photographic evidence is no longer admissible in many state courts because of the image manipulation skills possessed by many second-year undergraduate students.)

Visual communication design students do have to learn the intricate workings of various software programs to execute much of their work today, and the breadth of what they can actually execute is vast, but they must also learn how easy it is for them to create work that cannot be successfully reproduced or easily downloaded. Designers now must assume a much greater responsibility regarding the physical preparation of their work for raster image processing, or for Internet transmission or for configuration in a kinetic multimedia environment. And the visual messages they create still have to be interpretable by their readers.

Having working knowledge of a broad array of graphics applications software does not guarantee that a student will use it to design efficiently or effectively. As a communication

design teacher, I am as responsible as I have ever been for ensuring that my students learn how to structure both a modern and a traditional book page. But since 1992 I've taught them to use page layout software to evaluate the proportional relationships between page margins and the shape and placement of narrative text by utilizing devices such as multiple master pages and primary and secondary guidelines. I often ask students in my digital classrooms the following question: does your page architecture and your typographic configuration support the essential meaning inherent in the assigned text? I then remind them that just because they can manipulate software to achieve a "special" visual effect does not necessarily mean that they should. Using software to blur, distort, smear, smudge or fracture letterforms and imagery for the sheer technical thrill of doing it is fun, and can be stimulating, but it is not designing. If a student designer's idiosyncratic sense of typographic whimsy and exploration is all they are challenged to explore in the digital design classroom, they probably won't fully come to understand their responsibility to their client and their audience: their "bridges to effective visual communications" may be visually interesting, but they won't connect at both ends.[10] This caution is not intended as an absolute rejoinder against using the inherent flexibility of the digital platform as a means to redefine the aesthetic parameters for how we perceive type; it is merely a reminder that if students come to view the potential of the platform predominantly in this context, they run the risk of creating work whose physical form does not signify its content and therefore fails to communicate. They will also miss the opportunity to employ the incredibly malleable potential of the computer as a conduit through which they can

[10]Please reference footnote 5.

exchange meaningful information with people working outside their discipline and evolve into the critically informed communication facilitators and strategic planners that the next century requires.

> If students can be taught to use the digital platform as an environment within which they can engage in the process of planning communication strategies, they can also begin to teach themselves a variety of means for obtaining new information and how to use it once exposed to it. As educated critical thinkers who understand not just the functionalities of graphics applications software, but its potential for helping them learn how to learn, they will become empowered, pro-active visual communicators. Students need to be taught to utilize computers both as tools and as mediums within which they can develop a broad array of critically well-considered personal voices or visual languages. In this way, they become technologically competent without losing sight of the fact that their ability to manipulate software does not absolve them from the responsibility of engaging in the process of strategic thinking. If the digital platform is presented to them as an organizational tool, as an extremely fluid means to plan visual communications and organize typographic structures, students will become sensitized to the need for

them to contextually synthesize, analyze and evaluate their own work beyond a level that is merely technically adept.

It is imperative that communication design students in digital classrooms are challenged with design opportunities that are process intensive (as opposed to opportunities that are primarily task-oriented). In this way, they become familiar with how various decision-making methodologies can help them establish the criteria necessary to evaluate the progress of their work; they can develop and come to trust their own, personally derived sets of design parameters. For this to happen, students must at least temporarily be released from the anxiety that comes with being forced into a performance-based production ("A+") for every assignment. They must be allowed to exert their energies toward becoming competent designers, who are aware of the contexts that their work must fit into (or challenge), as opposed to designers who are merely adept at producing objects according to someone else's instructions. Failures need to be celebrated as much as successes, especially if planned, calculated risks were taken from which the student gained critical insight.

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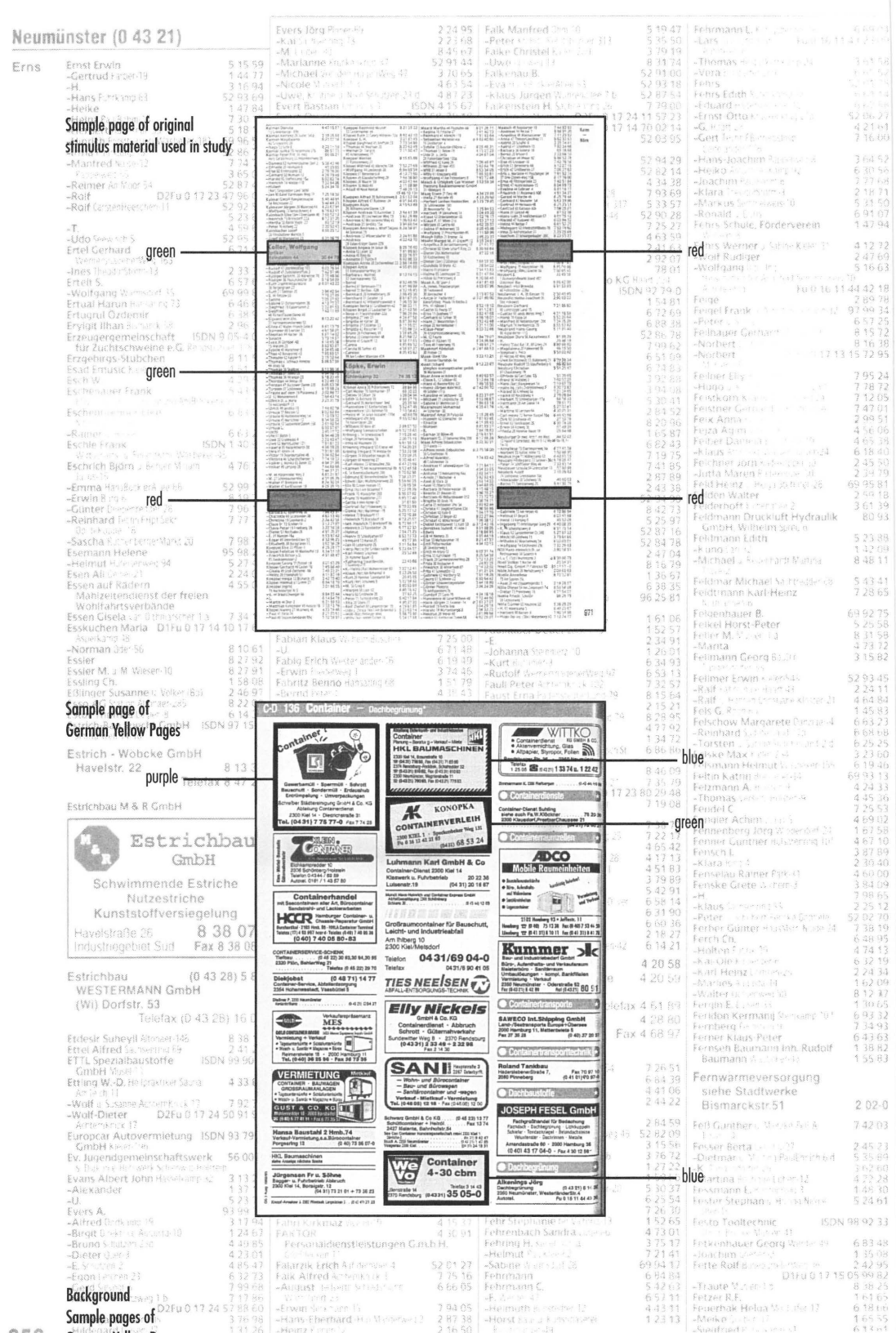
Neumünster (0 43 21)
Sample page of original stimulus material used in study
green
green
red
red
Sample page of German Yellow Pages
purple
blue
green
blue
Background

On the Effectiveness of Highlighting Ads in Telephone Directories by Color

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Ads in simulated telephone directory pages were highlighted in red, green and blue colors, and presented to readers in order to be recalled and to be recognized among other ads. Stimulus material included both pages with one highlighted ad on the page and with five ads on the same page. Results indicate that red and green highlighting increases the recallability and recognizability whereas highlighting in blue decreases it. With more than one ad on a page to be recalled and recognized, the success of highlighting depends also on the position of the ad on the page. If there are more highlighted ads on the page, it is advisable to highlight it in a different color, or not at all.

Are red, green or blue highlighted ads in telephone directories more effective than ordinary ones, in the sense that they attract more attention of potential customers among the users of the respective telephone directory? The following paper reports the results of an experimental study pointed at this question.

According to Gallup (1935, cf. Anastasi, 1964), the success of an advertisement may be measured by finding out how well it is remembered by a viewer. Thus, we will consider, in the following study, the recallability and recognizability of ads by human subjects.

method

After some preliminary studies on the recallability and recognizability of different ad texts, we ran two main experiments.

In the first one, subjects were presented single telephone directory pages which contained each, only one ad at a certain position on the page (top left, bottom left, center, top right, bottom right), highlighted in a certain color or not at all highlighted, i.e., black and white. Thereafter, subjects were questioned for their memories, and we counted how many red, blue, green or not highlighted ads they recalled and recognized, and whether a specific position of an ad gave it an advantage of being remembered.

In the second study, subjects were also presented telephone directory pages, and asked to recall specific ads from their memories, or to recognize them among others. However, this time there were up to five ads to be memorized on a single page, partly highlighted in different colors. In this study, we controlled the order of presentation as an additional variable.

All ads presented were about equally easy to understand with respect to their text (as assured in the preliminary studies for the selection of stimulus material). Thus, we avoided that ads could be memorized

better or worse just because of differences in the difficulty of the text they contained.

Subjects were recruited by means of an ad in the local newspaper. Their age varied between fourteen and seventy-four years, and they came from a large variety of professions.

results

Experiment 1 • In the first study, thirty-four subjects participated in three sections in each of which they were presented five telephone directory pages each of which contained one ad which was highlighted in green, red, blue or not at all. At the end of each section, the subject was asked which ads he or she recalled, and thereafter which one he or she recognized among a set of other ads.

1. Color

To analyze the data with respect to the effectiveness of color, we first calculated, for each level of color (red, green, blue or none = white), the probability and expected number of recalls and recognitions under random conditions, i.e., if all hits were just by chance, and if all highlightings including the white one were equally effective.

The observed frequencies for *red* highlighted ads are slightly higher than the expected ones which indicates that ads highlighted in red are remembered better than expected under random conditions.

The opposite is true for *blue* highlighted ads. The respective frequencies are lower than expected by chance, i.e., they are less well recalled and recognized than under random conditions.

However, these two tendencies are rather small differences which do not reach statistical significance. For *green* and *non*-highlighted ads we observed no systematic deviation of observed frequencies from expected frequencies at all.

On the other hand, if we group all ads highlighted in color together, and compare them to those without highlighting, we find that the highlighted ads altogether are both better recalled and better recognized, a tendency that reaches statistical significance but only for the dependent variable "trade" (line of business).

2. Position of the ad
Ads in the position "top left" are recalled, in general, significantly better than in other positions, and ads in position "bottom right" are significantly less well recalled than in other positions. The same tendency holds for recognition but does not reach statistical significance.

3. Sequence of presentation
The position of an ad in the sequence of presentation of five pages also influences the quality of recall and recognition. Thus, ads on the fourth page in the sequence are less well recalled and recognized, and those on the fifth page are better recalled and recognized. However, this difference reaches statistical significance only for recall, and not for recognition.

Experiment 2 • In Experiment 2, subjects were shown ads highlighted in different colors and non-highlighted ones in competition on the same page. Subjects were run in three groups:

Group 1: Sixteen subjects saw, each, ten ads highlighted red and five ads highlighted green (Condition 1). Sixteen other subjects were shown the same ads but with "red" and "green" interchanged, i.e., ten highlighted green, five highlighted red (Condition 2).

Group 2: Forty subjects saw fifteen ads highlighted red and fifteen non-highlighted ads, in Condition 1: Ten ads highlighted red and five non-highlighted, in Condition 2: Ten non-highlighted and five highlighted red.

Group 3: Thirty subjects were shown ten red, ten green and ten non-highlighted ads (Condition 1 and 2: five red, five green and five non-highlighted ads, each).

1. Color

In Group 1, ads highlighted green were better recalled and better recognized than red ones. But the difference between these two colors is not large enough to be statistically significant. Both red and green highlighted ads would be approximately equally successful in being remembered by the readers if they are presented in competition.

A significant difference between non-highlighted and red highlighted ads occurs in Group 2, both for recall and recognition. The red highlighting is clearly superior. Sixty-one percent of all recalled ads, and fifty-six percent of all recognized ads were highlighted red.

The results in Group 3 are compatible with those reported above, although it is not possible to compare these Groups directly, because of the different internal conditions. These thirty subjects recalled ads highlighted in red and green much better than expected under chance, with little difference between these two colors. The non-highlighted ads are considerably less well recalled under the influence of the competing highlighted ads (twenty-five percent of all recalled ads were non-highlighted, seventy-five percent of them highlighted). In the recognition condition, these differences are confirmed, but here the differences are not large enough to reach statistical significance.

So far, we have seen that highlighting of ads in color considerably improves the advertising success, in different groups and conditions. However, this statement has to be restricted in the light of another result of our study: If there are five ads on the same page of which four are highlighted in color, then the remaining non-highlighted one is much more often recalled (thirty-one percent of all recalls) than expected under random conditions. This is a confirmation of the Von-Restorff-effect, well-known in psychology and explained by an orienting reflex (Köhler and von Restorff, 1933; Sokolov, 1960). We could not find out, in the frame of this study, whether this holds for all possible positions of the ad on the page.

In addition to the results reported so far, we also compared the findings with a page under Condition 1 and the corresponding page under Condition 2. Only one significant difference of this kind was observed in Group 1: These pages contained a red or a green highlighted ad in positions "top left" and "bottom left," respectively. The ad in the position "bottom left" was considerably better recalled (ninety percent of all recalls) if it was highlighted in green.

In Group 2, a non-highlighted ad in position "top left" was better recalled than the same ad in the same position if it was highlighted in red (eighty-eight percent of all recalls) if there was another non-highlighted ad in the center of the page and if there were red highlighted ads in the other three positions. Interchanging the colors on the same page resulted in a substantially higher rate of recall for the red highlighted ad in the center position (eighty-two percent of all recalls) than in the opposite condition. This result may be interpreted together with the finding that, among five ads, a highlighted one is better recalled than the others since in both cases a minority of ad styles gains better recall frequencies.

In Group 3 a red highlight in position "top right" was superior to a green one (complementary condition: non-highlighted) if there were three non-highlighted ads in positions "center," "bottom left" and "bottom right" on the same page. The proportion of recalls of a red highlighted ad in position "top right" relative to all recalls of the same ad is as high as seventy-eight percent. This result is also reached by an ad highlighted red in the same position (complementary condition:

non-highlighted) if there is a non-highlighted ad in position "top left" and if the other positions are occupied by green highlighted ads. An ad highlighted green in position "bottom right" is less well recalled (twenty-one percent of all recalls) if there is an ad highlighted red in position "top right."

Except for these relations, we found no significant differences in the comparison of individual pages. These results might be an indication of an interaction between the variables "color" and "position."

2. Position of the ad

Experiment 2 has shown that, with the presentation of two, three or five ads on the same page, the position "top left" promises the best advertising success, contrary to the results of Experiment 1. This holds not only for recall but also for recognition of ads. The recall rates for ads in this position are partly up to forty percent whereas only twenty percent would have been expected by chance. Ads on the right hand side of a telephone directory page seem at disadvantage both in recall and in recognition.

summary of results

All results reported above refer to the whole ad, i.e., to the sum of recall and recognition frequencies for all of its elements. In most cases (except for the last name of the advertiser) there are no statistically significant differences between the elements of the ad. Thus, the results of our study may be summarized as follows:

1. *One ad on a page to be highlighted (or not):*

a) Ads highlighted in red are more effective than ads highlighted in green or not at all; ads highlighted in blue are less effective than the others.

b) Ads highlighted in color result in more advertising success than non-highlighted ones.

c) Ads in the position "top right" result in a higher advertising success than those in other positions.

2. *More than one highlighted ad on the same page:*

a) Ads highlighted in red or green reach about the same advertising success if they occur together.

b) Ads highlighted in red are more effective than non-highlighted ones if they occur together.

c) Ads highlighted in red or green are more effective than non-highlighted ones if these three kinds occur together on the same page.

d) If an ad is highlighted in a different color than the other ads on the same page, it reaches, on the average, a better advertising success.

e) If an ad occurs at the left hand side of the page (especially top left), it reaches an above average advertising success.

Thus, it seems useful to coordinate the choice of highlighting and positioning of an ad on a telephone directory page in accordance with the positions and highlightings of other ads on the same page. If these are not known before the advertiser's choice has to be made, a highlighting in color is preferable to non-highlighting, and the positions "top left" and "bottom left" are preferable to all other positions.

Note that all these recommendations are based on statistics, i.e., our statements are probabilistic, and not necessarily true in each individual case.

References

Anastasi, Anne. 1964. *Fields of Applied Psychology*. New York: McGraw-Hill.

Gallup, George. 1935. Gallup founded in 1935 the American Institute of Public Opinion where such techniques have been developed. Description in Anastasi (1964, chapter 10).

Groggel, Wiebke and George Gutschmidt. 1990. Farbige Hinterlegung von Anzeigen in der Telefonbuchwerbung. Hausarbeit zur Diplomprüfung für Psychologen, Kiel: Institut für Psychologie der Christian-Albrechts-Universität.

Köhler, Wolfgang and Hedwig von Restorff. 1933. Analyse von Vorgängen im Spurenfeld. I. H. von Restorff): Über die Wirkung von Bereichsbildung im Spurenfeld. *Psychologische Forschung*, 18, 299-342.

Sokolov, E.N. 1960. Neural Models and the Orienting Reflex. In: Brazier, H.A.B., editor. *The Central Nervous System and Behavior*. New York: Josiah Macy, Jr. Foundation.

Dirk Wendt is a professor of psychology teaching at the University of Kiel, Germany. One of his research interests is the effectiveness of typographic design. **Wiebke Groggel** and **Georg Gutschmidt** were graduate students who ran the present study as their diploma thesis under the supervision of Dirk Wendt.

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Book \Book\, *n.* [OE. book, bok, AS. b?c; akin to Goth. b?ka a letter, in pl. book, writing, Icel. b?k, Sw. bok, Dan. bog, OS. b?k, D. boek, OHG.puoh, G. buch; and fr. AS. b?c, b?ce, beech; because the ancient Saxons and Germans in general wrote runes on pieces of beechen board. Cf. Beech.] **1**. A collection of sheets of paper, or similar material, blank, written, or printed, bound together; commonly, many folded and bound sheets containing continuous printing or writing.

Review \Re•view"\, *v. t.* [imp. & p. p. Review?d; p. pr. & vb. n. Reveiwing.] [Pref. re- + view. Cf. Review, n.] **1**. To view or see again; to look back on. [R.] ``I shall review Sicilia.'' - Shak. **2**. To go over and examine critically or deliberately. Specifically: (a) To reconsider; to revise, as a manuscript before printing it, or a book for a new edition. (b) To go over with critical examination, in order to discover excellences or defects; hence, to write a critical notice of; as, to review a new novel. (c) To make a formal or official examination of the state of, as troops, and the like; as, to review a regiment. (d) (Law) To re["e]xamine judically; as, a higher court may review the proceedings and judgments of a lower one. **3**. To retrace; to go over again.

Sloppy "Scholarship" — *The Century of Artists' Books*
reviewed by Richard Kostelanetz

The Century of Artists' Books
by Johanna Drucker
New York: Granary Books, 1995
ISBN 1-887123-01-6
377 pages, hardbound,
illustrated, $35

I've never before had the occasion to review a book mostly in terms of what it says (or in this case doesn't say) about my work; but I find no better way to reveal the limitations of Johanna Drucker's *The Century of Artists' Books* and would rather not resort to the ruse of getting someone else to elaborate my objections, more superficially "acceptable" though that appearance might be. At least in discussing my own efforts in this medium, Drucker's book appears to be an inadvertent illustration of my suggestion in *A Dictionary of the Avant-Gardes* (1993) that, "When a professor writes three words about an avant-garde subject, one of them is likely to be superficial and a second to reveal ignorance, even if the writing comes accompanied, as it usually is, by encomia from other academics."

Drucker's definition of "concrete poetry" speaks of "forging an unity between the visual and verbal aspects of a work." This definition does not accurately summarize the initial "concrete" manifestoes, although it does describe many examples anthologized under the "concrete" label. Drucker continues, "Concrete poets take the concept of materiality of language farther than earlier experimenters, trying to forge inseparable bonds of meaning and presentation through visual form." Once again, the first part of this sentence ("materiality of language") reflects concrete theory; the second, about visual form, does not. My Dictionary says that, "[concrete poetry] aims to reduce language to its concrete essentials, free not only of semantic but syntactical necessities. The true concrete poem is simply letters scattered abstractly across the page or a succession of aurally nonrepresentational (and linguistically incomprehensible) sounds."

Drucker's critical fuzziness accounts for why my own books are initially classified as "concrete," right after Eugen Gomringer (one of the original theorists), Ernesto M. de

Melo e Castro and John Furnival, though I've never used that epithet to define my own work, clearly preferring "visual poetry" in essays reprinted in *Twenties in the Sixties* (1979), *The Old Poetries and the New* (1981), and *Wordworks: Poems New and Selected* (1993), among too many other places. (One moral of this story is that you can't reprint something often enough if you want academics to see it, contrary to the bias against "multiple submissions"). Needless to say, perhaps Furnival's work is likewise more visual than concrete. Were Drucker to reinterpret my poetry, she might find the "concrete" epithet applicable to my book *Solos, Duets, Trios & Choruses* (1991), but it isn't mentioned.

"Kostelanetz," she writes, "characterizes these 'concrete' works as 'emphasizing the fragmentation of language,'" but that last phrase sounds unfamiliar to me as well as untrue. (Drucker didn't locate it, when I asked about its source.) She sees in my poetry a "seemingly endless number of approaches to the deconstruction of language," which I don't think true either, flattering though it might be. It would be more correct to thick, hand-sized paperback edition, which has one event to a page, she seems not to know the tabloid-sized newsprint version, whose pages contain many of the same events (in the same sequence). What makes this omission disappointing is that the purpose of the two-edition *One Night Stood* is discovering whether the same precise text in radically different formats can generate different reading experiences.

Were Drucker more familiar with book-art books of mine published in the 1980s and 1990s, she might have noticed that the short entries in *One Night Stood* foreshadow my later, more developed interest in scrupulously minimal fictions that have been published in many magazines since the early 1980s and collected in a 1994 book of that title. On page 352 Drucker cites the "Edizioni Amodulo, n.d." edition of my *Accounting* without acknowledging that I have long identified that edition as defectively incomplete (e.g., in any list of my "Book-Art Books" or "Archae Editions" for the last decades), instead certifying the 1973 edition published by PN Books. She seems not to know other books of mine containing numerals arrayed in expressive shapes, such as *Exhaustive Parallel Intervals* (1979), which is incidentally featured in the Robert C. Morgan essay acknowledged in its entirety on 332 of her footnotes. (This reflects a scholarly failure to seek out examples evidently known to her. Thorough research is not

among her developed skills.) She seems not to know my photograph book *Reincarnations* (1984), my loose-leaf books *Rain Rains Rain* (1976) and *And So Forth* (1979), or the narratives collected in *Short Fictions* (1974) and *More Short Fictions* (1980), all of which are still in print, even though the first could have been acknowledged around her page 213 and the last pair around her page 270.

Drucker seems likewise unaware of my oft-reprinted manifesto on "Constructivist Fictions" and thus of the several books (1974-1991) exemplifying the principle. This accounts for why she can suggest in her first footnote on page 332 that the epithet "suprematist" might be more appropriate to *Inexistences: Constructivist Fictions* (1978), whose square pages beyond the initial two are wholly blank. Though superficially persuasive within the limited evidence she presents, this caveat depends upon her ignoring those other "constructivist" books that likewise have square imagery and/or format. With this larger context for *Inexistences* in mind, she might have accounted for how a resonant verbal frame, printed on the cover and opening pages, can give meaning, in the tradition of conceptual art, to the absence of ostensible content. Perhaps this last theme would have become more apparent if Drucker had known the likewise nearly-all-blank companion to *Inexistences*, a larger and thicker book also published in 1978, *Tabula Rasa*, which clearly is sub-titled "A Constructivist Novel."

Need I say that I didn't intend for Professor Drucker (Yale) to illustrate so vividly my characterization of academic avant-garde criticism or to inadvertently waste more words about her mistakes and ignorance than she wrote about me. I wanted to like this book because I agree with her general emphasis on book-art, rather than illustrated books, painter-writer collaboration, "livres d'artists" or other bastardized forms. Her commentary does introduce a large number of practitioners, though omitting, at times conspicuously, John Cage, Alain Arias-Misson, Jean-Francois Bory, Manfred Mohr, Don Celender, Paul Laffoley, Wally Depew, M. Vaughn-James, Claes Oldenberg, Michael Kasper, Allan Kaprow, Barbara Rosenthal, R. Murray Schafer, Carol Stetser and Merce Cunningham-Frances Starr, all of whom I've discussed in essays that someday ought to be collected into a book. "Definitive" this book isn't.

More than once Drucker's text reminded me of anthologies of mine that she seems not to know — *Imaged Words & Worded Images* (1970), *Future's Fictions* (1973) or *Breakthrough Fictioneers* (1973) — all of which are still in print and perhaps available in better university libraries. Wishing her ignorance and illiteracy was limited to my books, I nonetheless noticed on page 106 her reference to "John Dos Passos's text from his novel *Metropolis*," which sounds like a thoughtless translation back into English of his Manhattan Tranfer, and her recurring insecurity about commas that are both inserted and omitted to excess. My predispositions notwithstanding, the level of error and ignorance here does become provocative, especially to anyone familiar and concerned with the subject. Perhaps Drucker did better in her discussion of other book artists and that the next book on this needlessly neglected subject will be better, at least by me.

Richard Kostelanetz continues to produce book-art books, including *Woodworks: Poems Selected and New* (BOA, 1993), *Minimal Fictions* (Asylum Arts, 1994), *Ecce Kosti* (Archae, 1996) and *Openings* (Depth Charge, 1996).

Encyclopedia of the Book
reviewed by Colin Banks

Encyclopedia of the Book
Geoffrey Ashall Glaister
London: The British Library, cloth
£65, paperback £35
United States: Oak Knoll Press, $75
ISBN 1-884718-15-9
550 pages, 260 x 180mms

The first version of this book was published in 1960 and was thirty years in the writing. A large part was done in Dacca, now in Bangladesh, where Glaister served three times as British Council Librarian. How did he ever find the space, for the library now as it no doubt was then is always packed with demanding students. Perhaps Glaister put in some extra time by following the custom of the country and squatting outside on his heels under a street light with his books to get some extra illumination gratis into a short equatorial day. It is an engaging thought. He did cut a few corners by running his own unlicensed yellow rickshaw.

That 1960 edition, *Glossary of the Book*, opened with this 1716 apologia by Thomas Watts:
not withstanding all the Care that has been taken to be some Errata found in this Book, which we are persuaded are not many, it is hop'd the Publick will have the Goodness to pardon 'em, when they reflect little Time I can have to spare from my daily Employment, and even what interruptions must accompany those Moments.
We all know what he means.

This conspectus defines trade terms used by editors, printers, binders and bibliophiles; both historical and in current use but concluding with photosetting, the beginning of the common use of offset litho for the printing of books and the computer for text setting. Pinned down here in print are sound definitions of materials and machines, biographies of printers and publishers and milestones on the path of book history and printing techniques. It has the seductive hold of all good encyclopedias, you look up one thing to be found one hour later engrossed in another: but then it can save so much time, "have you tried Glaister?" has often cut short much chatter and searching.

The book is very much the creature of the man; out of nearly 4000 entries, less than 400 can be in any way attributed to other

authors. This gives some character and partiality to its make-up: we find eight full columns of text about Bengali printing sandwiched between Ben Day Tints (five lines) and the 1886 Ben Convention on Copyright (eight lines.)

The roots of the book are in *Grafisk Uppslagbok* published by Esselte in 1951, where Glaister recoursed to translations from the Swedish, which he acknowledged. He was also generous in his appreciation of his publisher, Stanley Unwin (no entry here though), and Unwin's production manager Ronald Eames, who "guided my labors for eight years." It seems Eames got caught up in the machinery for he was in at every stage of the gestation on the next 1979 version Glaister's *Glossary on the Book*. This took its heavyweight place on my bookshelf alongside Rudolph Hostettler's invaluable and diminutive multilingual *The Printer's Terms* 1949 and 1953; and it is that 1979 Glaister that is reissued here substituting "Encyclopedia" for "Glossary" in the title.

All that has been added is a new interesting twelve page introduction by Donald Farren. Farren's last paragraph states: *At the center of this work is the printed codex . . . Glaister set out to document it in all its polymorphic, polytechnic, and polyhistoric aspects. And succeed he did. It would be a foolish anachronism to fault Glaister for now being out of date — and impertinent to attempt to update the book.* This sounds like a cheap cop-out to me, someone ought to do it. This is the paradox about this book, we are pleased to see it in print again for it is invaluable as it is, but this puts off the day when it has to leave a predominantly letterpress workshop and step across the threshold of the 1980's. Glaister's books dropped dead on the doorstep of our digital world.

Sadly, the offset reproduction of the original Times New Roman setting is thin and spotty. The computer-set new introduction by Farren is in too long a line for the type size and resorts to contemporary horrors like bumping out and compressing the interletter spaces to fit the measure. Thanks are offered for a binding that is serviceable and decent paper; things we owe to the high standards of American libraries, but they are still not of the quality of the 1979 Unwin edition. The reproduction of the rather bad halftone illustrations makes a mystery of what they intend to make plain. This book will be used a lot so it needs to be hard bound. At £65 for a cheaply produced reprint, the British Library has overpriced it. In the States it costs about £46. This happens all the time — why?

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Practice with Philosophy? — *Design Writing Research*

reviewed by Sharon Helmer Poggenpohl

Design Writing Research
Ellen Lupton and J. Abbott Miller
New York: Kiosk, 1996
ISBN I-56898-047-7
211 pages, hardbound, illustrated, some in color, $45

Design Writing Research represents the work of Ellen Lupton and J. Abbott Miller with their particular Derridean slant on the project of communication. The articles and demonstrations assembled in this book have been published elsewhere — they are slices of history and analysis from a poststructural perspective. The book follows the temper of the time with brief, sound-bite-like, presentations rather than an indepth, sustained argument that develops over the space of the book. I have no doubt Lupton and Miller could develop such an argument and its focus would be a critical history — but this is not it. Poststructuralism's stress on the openness of interpretation may make it impossible for these authors to ever take an extended, closely argued stand — brief analytical forays are more compatible with "openness."

Having considered over many years, as a teacher, practitioner and journal editor, the formidable problem of moving between theory and practice, I know that this is one of the fundamental issues facing the role of design in our swiftly changing culture. The first pages of *Design Writing Research* begin with an exploration of what Derrida postulates as a theoretical foundation for communication. The project of modern criticism in which meaning is uncovered by studying the way in which form and content communicate is dismissed in favor of deconstruction, with its focus on the linguistic and institutional systems that frame production. Criticism needs as many analytical tools as it can muster in order to dig beneath the crust of custom and routine. So for me, modernist criticism alone or deconstructivist criticism alone is not the issue. Deconstructive approaches have yielded new insights particularly through examination of institutional systems which usually remain out of sight. This is most clearly demonstrated in the essay "White on Black on Gray" in which

the tacit understanding of racial separation in post World War II American media, gave way to separate but "equal" treatment and finally to integrated presentation of races — not always perfectly achieved, but certainly more visually present. The glue in this argument is institutional — advertising's reading of acceptable race relations in America and the presentation possibilities that resulted. The examples of advertising from that period to the near present document the shift in institutional attitude.

But back to theory and practice — if deconstructive readings in Lupton and Miller's judgment can serve to help design practitioners to more critically construct communication, then the leap that I have made between some theory statement and its application in practice demonstrated in the just mentioned essay needs to be more explicitly stated. How does one develop the appropriate critical posture? What questions drive the research? What is the importance of graphic documentation? What analytical tools help us to understand the current situation, the context in which design work is done? Theory and practice need to be didactically united for without such a tie it is too easy to dismiss theory as ungrounded in application, or to view practice as a spontaneous pragmatic achievement, lacking any philosophical or theoretical foundation. Because Miller and Lupton seek to position themselves as design "thinkers" *and* "doers," this bridge between theory and practice must be made explicit.

Another section of the book that comes closest to demonstrating theory is the historical time-line at the conclusion. Here institutional change including the rise of advertising, the unification of the country through transportation, mass production, consumption, the rise of the corporation and technology change, including printing, photography, typographic invention, the computer and mass media frame the changing panorama of American communication from 1829 to 1993 as revealed in Presidential election year segments. The time-line is not inclusive, but one fairly consistently selected interpretation. There is an attempt to move beyond institutional and technological change into a deeper reading of changing social factors such as abolition, suffrage and equal rights. These leaps are a bit choppy as the abbreviated nature of a time-line does not support deep development.

An essay that proved problematic for me was "Language of Vision" in which the authors insist on a forced dichotomy between a critical focus on perceptual analysis (Gestalt in particular) versus interpretation. Again the issue isn't either/or but both/and. Perceptual analysis needs to be placed within the development of syntactical understanding that was and is a hallmark of the twentieth-century understanding of the construction of the world. From experimental poets like Mallarmé, to linguists like Saussure, to constructivism in Russia, to painters like Mondrian and architects like Rietveld — the world was transformed from whole sentences or rhyming patterns to elemental words and sounds; from representation of things to the structural components of image-making. Early "Derridean" typographic attention is present in the work of Herbert Bayer and Jan Tschichold, for example, yet it was produced pre-Derrida. Activities like these laid bare the language fundamentals with which we "write" (also draw and construct) the world. Escape velocity from the world of literal things was achieved — and this was no mean achievement. Abstraction allowed control over all kinds of language. Rather than a mindless immersion in locked-down, conventionalized language, we could distance ourselves from it and understand its constructive properties. Identification of the basic elements brought both system recognition (how the elements went together) and control. Abstraction and system are learned modalities without which we are left with imitation of existing forms or revolutionary, intuitive "genius."

The modernist project of abstraction and constructivist control was shared by the arts and sciences. Psychologists examining perception were involved in empirical studies (Max Wertheimer, Wolfgang Kohler and Kurt Koffka). Meanwhile Freud and Jung were plumbing deep interpretation of dreams and archetypes. Interpretation was the rage. Defining perceptual principles was the rage. Both contributed to the beginnings of constructive knowledge of the human making of communication.

Undoubtedly this led to an aestheticizing extreme and this is what the authors denounce, turning instead to a search for social meaning in the construction of communication. In a semiotic sense, the

syntactic vision was becoming commonplace; it was running out of new material understandings — what remained was to plumb the semantic (which appears inexhaustible) and the pragmatic (which should yield interesting cross-cultural results). Many designers have recognized the need to better understand the making of meaning and the inevitable and inexhaustible nature of interpretation. The problem with this essay was a lack of context, a false dichotomy and an impoverished development for the preferred position of interpretation.

With one exception, the essay on punctuation "Period Styles," the authors carefully reference their sources in case the reader wants to investigate further. I was curious about the sources used for this piece and so I paid particular attention to their absence. The range of sources for most articles demonstrate the interdisciplinary nature of the Lupton and Miller pursuit.

The book is carefully designed and printed. The essays that demonstrate a historical development such as "Period Style" and "Language of Vision" come close to being cute, while other essays such as "Black and White on Gray" have a bite that can be traced historically through the visual documentation and text. The audience for this book is practitioners who are only beginning to discover that there is more to communication design than aesthetic manipulation and the technical realization of a project. Lupton and Miller are setting themselves up as exemplars for a new, more intelligent kind of design practice, but they are at their best when looking at popular culture.

In the end, the book seems to be walking a tightrope between a theoretical/philosophical undertaking with a praxis in tow and a self-promotion. In contrast to many design practitioners, these authors *have* a philosophy and a direction they are pursuing and it does combine design-writing-research.

Sharon Helmer Poggenpohl teaches human-centered communication design at the Institute of Design, Illinois Institute of Technology and edits this journal.

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