The Crystal Goblet

Key text

Beatrice Warde
1932

Imagine that you have before you a flagon of wine. You may choose your own favourite vintage for this imaginary demonstration, so that it be a deep shimmering crimson in colour. You have two goblets before you. One is of solid gold, wrought in the most exquisite patterns. The other is of crystal-clear glass, thin as a bubble, and as transparent. Pour and drink; and according to your choice of goblet, I shall know whether or not you are a connoisseur of wine. For if you have no feelings about wine one way or the other, you will want the sensation of drinking the stuff out of a vessel that may have cost thousands of pounds; but if you are a member of that vanishing tribe, the amateurs of fine vintages, you will choose the crystal, because everything about it is calculated to reveal rather than to hide the beautiful thing which it was meant to contain.

Bear with me in this long-winded and fragrant metaphor, for you will find that almost all the virtues of the perfect wineglass have a parallel in typography. There is the long, thin stem that obviates fingerprints on the bowl. Why? Because no cloud must come between your eyes and the fiery heart of the liquid. Are not the margins on book pages similarly meant to obviate the necessity of fingering the type page? Again: The glass is colourless, or at the most only faintly tinged in the bowl, because the connoisseur judges wine partly by its colour and is impatient of anything that alters it. There are a thousand mannerisms in typography that are as impudent and arbitrary as putting port in tumblers of red or green glass. When a goblet has a base that looks too small for security, it does not matter how cleverly it is weighted; you feel nervous lest it should tip over. There are ways of setting lines of type which may work well enough and yet keep the reader subconsciously worried by the fear of "doubling" lines, reading three words as one, and so forth.

Now the man who first chose glass instead of clay or metal to hold his wine was a "modernist" in the sense in which I am going to use that term. That is, the first thing he asked of this particular object was not "How should it look?" but "What must it do?", and to that extent all good typography is modernist.

Wine is so strange and potent a thing that it has been used in the central ritual of religion in one place and time and attacked by a virago with a hatchet in another. There is only one thing in the world that is capable of stirring and altering people's minds to the same extent, and that is the coherent expression of thought. That is the human's chief miracle, unique to us. There is no "explanation" whatever of the fact that I can make arbitrary sounds that will lead a total stranger to think my own thought. It is sheer magic that I should be able to hold a one-sided conversation by means of black marks on paper with an unknown person halfway across the world. Talking, broadcasting, writing, and printing are all quite literally forms of thought transference, and it is this ability and eagerness to transfer and receive the contents of the mind that is almost alone responsible for human civilization.

If you agree with this, you will agree with my one main idea, i.e., that the most important thing about printing is that it conveys thought, ideas, images from one mind to other minds. This statement is what you might call the "front door" of the science of typography. Within lie hundreds of rooms, but unless you start by assuming that printing is meant to convey specific and coherent ideas, it is very easy to find yourself in the wrong house altogether.

Before asking what this statement leads to, let us see what it does not necessarily lead to. If books are printed in order to be read, we must distinguish readability from what the optician would call legibility. A page set in 14 point Bold Sans is, according to the laboratory tests, more "legible" than one set in it point Baskerville. A public speaker is more "audible" in that sense when he bellows. But a good speaking voice is one which is inaudible as a voice. It is the transparent goblet again! I need not warn you that if you begin listening to the inflections and speaking rhythms of a voice from a platform, you are falling asleep. When you listen to a song in a language you do not understand, part of your mind actually does fall asleep, leaving your quite separate aesthetic sensibilities to enjoy themselves unimpeded by your reasoning faculties. The fine arts do that, but that is not the purpose of printing. Type well used is invisible as type, just as the perfect talking voice is the unnoticed vehicle for the transmission of words, ideas.

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We may say, therefore, that printing may be delightful for many reasons, but that it is important, first and foremost, as a means of doing something. That is why it is mischievous to call any printed piece a work of art, especially fine art: because that would imply that its first purpose was to exist as an expression of beauty for its own sake and for the delectation of the senses. Calligraphy can almost be considered a fine art nowadays, because its primary economic and educational purpose has been taken away; but printing in English will not qualify as an art until the present English language no longer conveys ideas to future generations and until printing itself hands its usefulness to some yet unimagined successor.

There is no end to the maze of practices in typography, and this idea of printing as a conveyor is, at least in the minds of all the great typographers with whom I have had the privilege of talking, the one clue that can guide you through the maze. Without this essential humility of mind, I have seen ardent designers go more hopelessly wrong, make more ludicrous mistakes out of an excessive enthusiasm, than I could have thought possible. And with this clue, this purposiveness in the back of your mind, it is possible to do the most unheard of things and find that they justify you triumphantly. It is not a waste of time to go to the simple fundamentals and reason from them. In the flurry of your individual problems, I think you will not mind spending half an hour on one broad and simple set of ideas involving abstract principles.

I once was talking to a man who designed a very pleasing advertising type that undoubtedly all of you have used. I said something about what artists think about a certain problem, and he replied with a beautiful gesture: "Ah, madam, we artists do not think – we feel!" That same day I quoted that remark to another designer of my acquaintance, and he, being less poetically inclined, murmured: "I'm not feeling very well today, I think!" He was right, he did think; he was the thinking sort, and that is why he is not so good a painter, and to my mind ten times better as a typographer and type designer than the man who instinctively avoided anything as coherent as a reason.

I always suspect the typographic enthusiast who takes a printed page from a book and frames it to hang on the wall, for I believe that in order to gratify a sensory delight he has mutilated something infinitely more important. I remember that T. M. Cleland, the famous American typographer, once showed me a very beautiful layout for a Cadillac booklet involving decorations in colour. He did not have the actual text to work with in drawing up his specimen pages, so he had set the lines in Latin. This was not only for the reason that you will all think of, if you have seen the old type foundries' famous Quousque Tandem copy (i.e., that Latin has few descenders and thus gives a remarkably even line). No, he told me that originally he had set up the dullest "wording" that he could find (I daresay it was from Mansard), and yet he discovered that the man to whom he submitted it would start reading and making comments on the text. I made some remark on the mentality of boards of directors, but Mr. Cleland said, "No, you're wrong; if the reader had not been practically forced to read-if he had not seen those words suddenly imbued with glamour and significance-then the layout would have been a failure. Setting it in Italian or Latin is only an easy way of saying, 'This is not the text as it will appear."

Let me start my specific conclusions with book typography, because that contains all the fundamentals, and then go on to a few points about advertising. The book typographer has the job of erecting a window between the reader inside the room and that landscape which is the author's words. He may put up a stained-glass window of marvellous beauty, but a failure as a window; that is, he may use some rich, superb, typelike text gothic that is something to be looked at, not through. Or he may work in what I call transparent or invisible typography. I have a book at home, of which I have no visual recollection whatever as far as its typography goes; when I think of it, all I see is the Three Musketeers and their comrades swaggering up and down the streets of Paris. The third type of window is one in which the glass is broken into relatively small leaded panes; and this corresponds to what is called "fine printing" today, in that you are at least conscious that there is a window there, and that someone has enjoyed building it. That is not objectionable because of a very important fact which has to do with the psychology of the subconscious mind. This is that the mental eye focuses through type and not upon it. The type which, through any arbitrary warping of design or excess of "colour," gets in the way of the mental picture to be conveyed, is a bad type.

3

Our subconsciousness is always afraid of blunders (which illogical setting, tight spacing, and too wide unleaded lines can trick us into), of boredom, and of officiousness. The running headline that keeps shouting at us, the line that looks like one long word, the capitals jammed together without hair spaces – these mean subconscious squinting and loss of mental focus.

And if what I have said is true of book printing, even of the most exquisite limited editions, it is fifty times more obvious in advertising, where the one and only justification for the purchase of space is that you are conveying a message-that you are implanting a desire straight into the mind of the reader. It is tragically easy to throw away half the reader interest of an advertisement by setting the simple and compelling argument in a face that is uncomfortably alien to the classic reasonableness of the book face. Get attention as you will by your headline and make any pretty type pictures you like if you are sure that the copy is useless as a means of selling goods; but if you are happy enough to have really good copy to work with, I beg you to remember that thousands of people pay hard-earned money for the privilege of reading quietly set book pages, and that only your wildest ingenuity can stop people from reading a really interesting text.

Printing demands a humility of mind, for the lack of which many of the fine arts are even now floundering in self-conscious and maudlin experiments. There is nothing simple or dull in achieving the transparent page. Vulgar ostentation is twice as easy as discipline. When you realize that ugly typography never effaces itself, you will be able to capture beauty as the wise men capture happiness by aiming at something else. The “stunt typographer” learns the fickleness of rich men who hate to read. Not for them are long breaths held over serif and kern; they will not appreciate your splitting of hair spaces. Nobody (save the other craftsmen) will appreciate half your skill. But you may spend endless years of happy experiment in devising that crystalline goblet which is worthy to hold the vintage of the human mind.

This essay was first given as an address to the Society of Typographic Designers, formerly the British Typographers Guild, London, 1932. It was later published in Beatrice Warde: The Crystal Goblet-Sixteen Essays on Typography.

The Rules of Typography According to ~~Crackpots~~ Experts

Key text

Jeffery Keedy
1993

The first thing one learns about typography and type design is that there are many rules and maxims. The second is that these rules are made to be broken. And the third is that "breaking the rules" has always been just another one of the rules. Although rules are meant to be broken, scrupulously followed, misunderstood. reassessed, retrofitted and subverted, the best rule of thumb is that rules should never be ignored. The typefaces discussed in this article are recent examples of rule-breaking/making in progress. I have taken some old rules to task and added some new ones of my own that I hope will be considered critically.

Imagine that you have before you a flagon of wine. You may choose your own favourite vintage for this imaginary demonstration, so that it be a deep shimmering crimson in colour. You have two goblets before you. One is of solid gold, wrought in the most exquisite patterns. The other is of crystal-clear glass, thin as a bubble, and as transparent. Pour and drink; and according to your choice of goblet, I shall know whether or not you are a connoisseur of wine. For if you have no feelings about wine one way or the other, you will want the sensation of drinking the stuff out of a vessel that may have cost thousands of pounds; but if you are a member of that vanishing tribe, the amateurs of fine vintages, you will choose the crystal, because everything about it is calculated to reveal rather than to hide the beautiful thing which it was meant to contain... Now the man who first chose glass instead of clay or metal to hold his wine was a "modernist" in the sense in which I am going to use the term. That is, the first thing he asked of this particular object was not "How should it look?" but "What must it do?" and to that extent all good typography is modernist.

Beatrice Warde, from an address to the British Typographers' Guild at the St. Bride Institute, London, 1932. Published in Monotype Recorder, Vol. 44, No. 1 (Autumn 1970).

Beatrice Warde's address is favoured by members of a vanishing tribe – typography connoisseurs who "reveal" beautiful things to the rest of us (modernists). Such connoisseurs are opposed to typographic sensationalists who have no feelings about the material they contain with their extravagance (postmodernist hacks). In short, the typographers with "taste" must rise above the crass fashion-mongers of the day. Connoisseurship will always have its place in a capitalist, class-conscious society and there is nothing like modernism for the creation of high and low consumer markets. The modernist typophile-connoisseur should rejoice in the typefaces shown here because they reaffirm his or her status as being above fleeting concerns. After all, if there was no innovation to evolve through refinement to tradition, then where would the connoisseur be?

Beatrice Warde did not imagine her crystal goblet would contain Pepsi-Cola, but some vessel has to do it. Of course, she was talking in terms of ideals, but what is the ideal typeface to say: "Uh-Huh, Uh-Huh, You got the right one baby"? There is no reason why all typefaces should be designed to last forever, and in any case, how would we know if they did?

The art of lettering has all but disappeared today, surviving at best through sign painters and logotype specialists. Lettering is being incorporated into type design and the distinction between the two is no longer clear. Today, special or custom letterforms designed in earlier times by a letterer are developed into whole typefaces. Calligraphy will also be added to the mix as more calligraphic tools are incorporated into type-design software. Marshall McLuhan said that all new technologies incorporate the previous ones, and this certainly seems to be the case with type. The technological integration of calligraphy, lettering, and type has expanded the conceptual and aesthetic possibilities of letterforms. The rigid categories applied to type design in the past do not make much sense in the digital era. Previous distinctions such as serif and sans serif are challenged by the new "semi serif" and "pseudo serif. "The designation of type as text or display is also too simplistic. Whereas type used to exist only in books (text faces) or occasionally on a building or sign (display), today's typographer is most frequently working with in-between amounts of type – more than a word or two but much less than one hundred pages. The categories of text and display should not be taken too literally in a multimedia and interactive environment where type is also read on television, computers, clothing, even tattoos.

2

Good taste and perfect typography are suprapersonal. Today, good taste is often erroneously rejected as old-fashioned because the ordinary man, seeking approval of his so-called personality, prefers to follow the dictates of his own peculiar style rather than submit to any objective criterion of taste.

Jan Tschichold, 1948, published in Ausgewählte Aufsatze über Fragen der Gestalt des Buches und der Typographie (1975).

"Criteria of taste" are anything but objective. Theories of typography are mostly a matter of proclaiming one's own "tastes" as universal truths. The typographic tradition is one of constant change due to technological, functional, and cultural advancement (I use the word "advancement" as I am unfashionably optimistic about the future).

In typographic circles it is common to refer to traditional values as though they were permanently fixed and definitely not open to interpretation. This is the source of the misguided fear of new developments in type design. The fear is that new technology, with its democratization of design, is the beginning of the end of traditional typographic standards. In fact, just the opposite is true, for though typographic standards are being challenged by more designers and applications than ever before, this challenge can only reaffirm what works and modify what is outdated.

The desktop computer and related software have empowered designers and nonspecialists to design and use their own typefaces. And with more type designers and consumers, there will obviously be more amateurish and ill-conceived letterforms. But there will also be an abundance of new ideas that will add to the richness of the tradition.Too much has been made of the proliferation of "bad" typefaces, as if a few poorly drawn letterforms could bring Western civilization to its knees. Major creative breakthroughs often come from outside a discipline, because the "experts" all approach the discipline with a similar obedient point of view. The most important contribution of computer technology, like the printing press before it, lies in its democratization of information. This is why the digital era will be the most innovative in the history of type design.

The more uninteresting the letter, the more useful it is to the typographer.

Piet Zwart, A History of Lettering, Creative Experiment and Letter Identity (1986).

Back in Pier Zwart's day most typographers relied on "fancy type" to be expressive. I don't think Zwart was against expression in type design as much as he was for expression (an architectonic one) in composition. Zwart's statement epitomizes the typographic fundamentalists' credo. The irony is that the essentially radical and liberal manifestos of the early modernists are with us today as fundamentally conservative dogma.

I suspect that what is most appealing about this rhetoric is the way the typographer's ego supersedes that of the type designer. By using uninteresting "neutral" typefaces (created by anonymous or dead designers), typographers are assured that they alone will be credited for their creations. I have often heard designers say they would never use so-and-so's typefaces because that would make their work look like so-and-so's, though they are apparently unafraid of looking like Eric Gill or Giovanni Battista Bodoni. Wolfgang Weingart told me after a lecture at CalArts in which he included my typeface Keedy Sans as an example of "what we do not do at Basel" that he likes the typeface, but believes it should be used only by me. Missing from this statement is an explanation of how Weingart can use a typeface such as Akzidenz Grotesk so innovatively and expertly.

New typefaces designed by living designers should not be perceived as incompatible with the typographer's ego. Rudy VanderLans's use of Keedy Sans for Emigre and B. W. Honeycutt's use of Hard Times and Skelter in Details magazine are better treatments of my typefaces than I could conceive. Much of the pleasure in designing a typeface is seeing what people do with it. If you are lucky, the uses of your typeface will transcend your expectations; if you are not so fortunate, your type will sink into oblivion. Typefaces have a life of their own and only time will determine their fate.

3

In the new computer age, the proliferation of typefaces and type manipulations represents a new level of visual pollution threatening our culture. Out of thousands of typefaces, all we need are a few basic ones, and trash the rest.

Massimo Vignelli, from a poster announcing the exhibition "The Masters Series: Massimo Vignelli," (February/March 1991).

In an age of hundreds of television channels, thousands of magazines, books, and newspapers, and inconceivable amounts of information via telecommunications, could just a few basic typefaces keep the information net moving? Given the value placed on expressing one's individual point of view, there would have to be only a handful of people on the planet for this to work.

Everything should be permitted, as long as context is rigorously and critically scrutinized. Diversity and excellence are not mutually exclusive; if everything is allowed it does not necessarily follow that everything is of equal value. Variety is much more than just the "spice of life." At a time when cultural diversity and empowering other voices are critical issues in society, the last thing designers should be doing is retrenching into a mythical canon of "good taste."

There is no such thing as a bad typeface... just bad typography.

Jeffery Keedy

Typographers are always quick to criticize, but it is rare to hear them admit that it is a typeface that makes their typography look good. Good typographers can make good use of almost anything. The typeface is a point of departure, not a destination. In using new typefaces the essential ingredient is imagination, because unlike with old faces, the possibilities have not been exhausted.

Typographers need to lighten up, to recognize that change is good (and inevitable), to jump into the multicultural, poststructural, postmodern, electronic flow. Rejection or ignorance of the rich and varied history and traditions of typography are inexcusable; however, adherence to traditional concepts without regard to contemporary context is intellectually lazy and a threat to typography today.

You cannot do new typography with old typefaces. This statement riles typographers, probably because they equate "new" with "good," which I do not. My statement is simply a statement of fact, not a value judgement. The recent proliferation of new typefaces should have anyone interested in advancing the tradition of typography in a state of ecstasy. It is always possible to do good typography with old typefaces. But why are so many typographers insistent on trying to do the impossible – new typography with old faces?

Inherent in the new typefaces are possibilities for the (imaginative) typographer that were unavailable ten years ago. So besides merely titillating typophiles with fresh new faces, it is my intention to encourage typographers and type designers to look optimistically forward. You may find some of the typefaces formally and functionally repugnant, but you must admit that type design is becoming very interesting again.

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Clarety: Drinking from the Crystal Goblet

Gunnar Swanson
2000

Beatrice Warde wrote that type is like a wineglass. The point of the simile had nothing to do with either craftsmanship or the potential for lead poisoning from handling Bembo or Waterford. Warde valued a plain crystal goblet over an ornate chalice because the latter vessel obscures the observation of the wine, which, she assumes, is the point of drinking. It is her greatest failing as a type critic that she never mentioned (or, apparently, even considered) the jelly jar.

Drinking wine from a jelly jar reveals the colour of the wine and saves both money and landfill space. The shape of the jar may not be optimal for swirling the wine to show off its legs, but the point of oenological gams is lost on me. If a wine has a feature that I cannot distinguish by smell, taste, or feel, why should I care? Such observation is useful in connoisseurship, but I have little interest in that. Knowing that I've paid three times the retail price for a better wine than the one that the folks at the next table paid three times the retail price for is, for some reason I can't explain, not central to my being.

If we are to assume that Warde was not merely a shallow snob obsessed with reassuring herself that she consumed the best available drugs, perhaps it is not the glass that she should have criticized, but the wine. I do not refer to criticizing the wine in the sense of comparing its colour to various gemstones, examining its body, noting the bouquet, sloshing it around in one's mouth, then spitting out both the wine and a pompous list of adjectives. I mean we should reconsider wine and wine drinking.

What is the relationship of colour to consumption? Is the look of the wine an arbitrary aesthetic addition to the drinking experience? How, then, are the ruby tones and visual indication of substance superior to a tankard encrusted with actual rubies-a vessel of more substance than any wine?

Such questions should not be dismissed as denigrating wine, as mere antioenologism. The wine is the medium that connects the wine maker and the drinker -it is not more important than either. Did Warde equate the typographer with the truck driver who delivers the wine to the café? No, I think maybe the busboy who sets the table or the restaurant manager who chose which glasses to provide... but I digress. Let's get back to the main point.

Perhaps the point of knowing whether a wine has legs is not a dry functional problem but a sweet bit of fantasy. (I have, by now, come to assume that a woman as thoughtful and accomplished as Beatrice Warde would not have ignored the jelly jar. Unless we are willing to consider the possibility of a morbid fear of getting jar-lid thread marks on her lips, we must believe that the legs issue was foremost on her mind, even though her biographers have not revealed any record of discussion of the subject.) There may be some considerable satisfaction in imagining the secret pattern of the rivulets formed as one swallows.

Knowing that viscous flows of Chateau Laffite grace one's tongue while flaccid sheets of Dego Red take a lingual fall at the next table could provide a sense of separation from the evil of banality that surrounds us all. I read an interview with a man who had several rings in piercings of his penis. He said it gave him a real satisfaction to stand in a crowded elevator knowing that he had something under his suit that nobody else even imagined. An old girlfriend of mine said she liked sitting in a meeting with a group of Japanese businessmen knowing that her garter belt, lack of underpants, and shaved pubic hair set her apart from everyone else in the boardroom. Perhaps a private knowledge of vinous currents provides that same sense of personal distinction.

The corporate records at Monotype are woefully incomplete. Among other things, they offer no insights into Beatrice Warde's preferences in underwear or hairstyles, and no particularly cogent information on the role of wine choice in type design.

A dozen years ago I drank alternating gulps of Fresca and rum with someone I met in Quintana Roo (or was it Yucatan?). In retrospect, it was a bit like reading Bookman with swash variations, but since we were drinking right out of the bottles, I'm not sure whether Beatrice Warde would find this story relevant to her essay.

Originally published in Graphic Design and Reading, Ed. Gunnar Swanson, Allworth Press, 2000.

Stephanie Zelman
2000

What I really want on the Macintosh is a virtual reality interface – armholes in either side of the box so you can reach in and move logos around; a real paintbrush so that you can feel the texture of the surface underneath. Neville Brody [1]

Although Neville Brody cannot get inside the box, the viewer of his work can. The irony of his above statement is that it was spoken by a graphic designer whose work captures the very ideal that he claims is out of reach. In stretching the boundaries of legibility and composing a layered, textured surface, for two decades graphic designers have been creating two-dimensional space with a three-dimensional effect.

Today, typefaces and their configurations contain meaning that is distinct from the words they create. Certainly, calligraphy, decorative type, and italic or bold letterforms have long served to express tone or heighten the impact of words. But the proliferation of computer technology into most areas of social experience, and especially in the field of communication design, has caused a fundamental shift in the way we decipher information. We are consumers of a complex lexicon of type and image-a viewing audience more accustomed to looking *into* space.

But computers alone do not have an effect on the way we read. All technologies incorporate a set of practices which in turn, presuppose a cultural disposition. Within the field of graphic design, there has been a shift from modern forms to computer-generated, deconstructionist ones. Underlying this trend toward digitization is a changing conception of the way we envision the world which generates new kinds of cultural meaning.

Modernism as a school of thought is supported by a model of vision that presupposes a linear path between a viewer's eye and an object of perception. In this conception, there is no "space" between the eye and an image because the act of seeing is not understood to incorporate human experience. Rather, the gazing "eye of distant and infinite vision" is disembodied from the self and shielded from the outside.[2]

This way of seeing is described by Robert Romanyshyn in *Technology as Symptom and Dream*. In his discussion of Renaissance painting Romanyshyn explains that the way artists began to represent the world in the fifteenth century caused a cultural form of vision that turned "the self into a spectator, the world into a spectacle and the body into a specimen." In his view, the depiction of the world on the canvas formed our actual perception of it.

We became isolated selves, detached from our own bodies and from the "outside" world, which we were left to observe from a distance. Romanyshyn's metaphor of a closed "window" describes a barrier between us and the world which can only be penetrated by the eye, implying that the visual component of our being is the only bridge between "inside" and "outside." As a result, our disjointed world (the legacy of the partition of the canvas) is infinitely removed from us. And the eye, as a gazing, distant point in space, distills our soulful sensuality. He writes,

The vanishing point, the point where the world as texture, quality, and difference has shrunk to a geometric dot, has no sound, no taste, no smell, no colour, no feel, no quality. It has only measure.[4]

Romanyshyn claims that linear perspective vision was an artistic view of the world that became a cultural one, as the "innate geometry of our eyes" began to perceive everything in the world on the same horizontal plane.[5]

This model of vision corresponds to the methodology of modern graphic design, which rejects an interplay between viewer and image and affirms that our internal makeup does not alter the impressions we receive. The modern designer's objective is to control the viewer's detached visual component so that information is transmitted seamlessly. In this process, meaning is finite and the text is closed.

In declaring that their practices were "neutral" and "objective," modernists in the 1940s began designing in accordance with these underlying conceptions. It was simply accepted that the human eye – divorced from the subjective apparatus of the emotional body – would always decipher a message in the same way. In attempting to control the eye, modern design dismissed the creativity of viewing.

The notions of monocularity and the separation of the eye from the body were also addressed by Marshall McLuhan in *The Gutenberg Galaxy*. While Romanyshyn claims that the invention of linear perspective painting served to isolate the visual component of our senses and divorce the self from the world, McLuhan, on the other hand, argued that the introduction of the phonetic alphabet and the printing press caused a break between the eye and the ear, disrupting the sensory complex and impairing the social spirit.

2

McLuhan explained that whereas an interplay of all the senses in traditional oral societies promoted a heterogeneous space of human interaction and interdependence, the invention of the printing press caused an adverse cultural transformation. He showed that printed matter was instrumental in causing the visual component to become abstracted from the other senses, inducing an internalized, static, and compartmentalized lived experience which ultimately led to a society of detached individuals.

McLuhan argued that humanity inherited a "fixed point of view" due to the abstraction of the visual factor. But unlike Romanyshyn, who believes the computer "will give flesh to this eye which in abandoning the body has dreamed of a vision of the world unmoved by the appeal of the world," McLuhan looked positively on technological innovation.[6] McLuhan affirmed that the electronic signal brings about a "stream of consciousness" and an "open field of perception" creating the possibility for a richer viewing activity.[7] He also claimed that our emerging electronic age could bring back the "mythic, collective dimension of human experience" that was experienced in oral culture.[8] For McLuhan, new information technologies cause a shift in our sense ratios, resulting in a reunification with one's self and with others:

The "simultaneous field" of electric information structures today reconstitutes the conditions and need for dialogue and participation, rather than specialism and private initiative in all levels of social experience.[9]

McLuhan's writings are prophetic given that the computer's multimedia and interactive capabilities, along with its capability to layer and link moving type and images, encourage continuous and simultaneous experience. And his understanding of our relationship with new information technologies supports the conception of a new kind of visual experience that occurs when typography enters the "polymorphous digital realm."[10] He observed that the electronic age "is not mechanical but organic, and has little sympathy [for] the values achieved through typography, 'this mechanical way of writing'..."[11]

The canonical, fixed, authoritative text that produced a passive visual experience goes hand in hand with the linear visual system of modern design. Conversely, in a digital milieu, type becomes unfixed and so does meaning. As Jacques Derrida observed, "one cannot tamper with the form of the book without disturbing everything else in Western thought."[12]

The decline of modernist ideas of legibility was inevitable the moment graphic designers dipped their creative fingertips into the binary pool. When the Macintosh computer was introduced to the field in the 1980s, designers began to layer and dissolve type and imagery – a practice that shattered the conception of a detached, objective reader. Designers began to endorse the sort of communication that would "promote multiple rather than fixed readings" and "provoke the reader into becoming an active participant in the construction of the message."[13]

Viewing began to be understood as a process of human involvement, which entails an "act of consciousness."[14] Ron Burnett articulates this point in *Cultures of Vision: Images, Media and the Imaginary*, where he explains that images are not just representations that enter our field of vision, but are experienced by us in a personal way. In examining our response to them, Burnett introduces the concept of "projection," which he describes as a "meeting point of desire, meaning and interpretation."[15] This union is, metaphorically speaking, a "space" between the viewer and the viewed, where the eye, along with the rest of the body and the human state of consciousness, encounters an image and creatively interprets it. Rather than presume that we are detached from that which is "outside" ourselves, "projection" is a way of describing how we subjectively and imaginatively engage with our world.

According to Burnett, even though we inject meaning into images – and are in that sense responsible for what we see-we do not have an observing power over the world. We may be fabricating our own viewing process when we project, but our fragile subjectivity hinges on physical, emotional, and psychological states. As Burnett explains, projections are "like filters, which retain all of the traces of communication, but are always in transition between the demands made by the image and the needs of the viewer."[16]

Although his discussion is primarily about images, Burnett's theory of vision can be applied to the way we experience graphic design. In fact, Johanna Drucker has made a similar argument in The Visible World: Experimental Typography and Modern Art:

[T]he materiality of the signifier, whether it be word or image, is linked to its capacity to either evoke or designate sensation as it transformed into perception, and that it in no case has a guaranteed truth value, only the relative accuracy within the experience of an individual subject.[17]

3

Burnett's notion of "projection" is helpful in identifying some of the features of typographic design in a digital environment, where designers have blurred the distinction between type and image. When typography is treated as imagery-that , when it is pushed to the limits of legibility – the result is an enhanced visual involvement on the part of the viewer. As designers transform the mechanics of representation, more demands are made on the viewer to interpret messages. Designers now expect that something like "projection" will occur while reading. For example, in *The End of Print*, David Carson's art direction of magazines such as *Ray Gun* and *Beach Culture* is defended on the basis that their audience does not need visual direction. Whereas most magazines "want their readers to know what to expect, to know where to look and how to read through a page," these publications establish "a different relationship with the reader."[18]

As the digital medium encourages designers to treat typography as imagery, readers are simply invited to interpret messages on their own terms. In fact, designers suggest that the more often a new typeface is used, the more familiar it becomes. Simply put by one type designer, "readability is a conditioned state."[19] Apparently, since words are no longer expected to contain truth-value, the fact that they are somewhat illegible at first does not seem to present too much of a problem. As stated by type designer, Jeffery Keedy,

If someone interprets my work in a way that is totally new to me, I say fine. That way your work has a life of its own. You create a situation for people to do with it what they will, and you don't create an enclosed or encapsulated moment.[20]

The less legible a typeface becomes, either on its own or in juxtaposition with other graphic elements, the more it takes on an inherent image. When this occurs, words are no longer simply read, but understood within the context of an entire visual construction. This is the visual language of deconstruction.

Deconstruction, as we learned from Jacques Derrida in *Grammatology*, is the technique of breaking down a "whole" in order to reflect critically on its parts. When using this method, the designer affirms that different interpretations will be discovered within the fabric that holds a message together. Unlike the linearity of modernism which implies a separation between the viewer and the viewed, and a "withdrawal of the self from the world,"[21] typographic deconstruction compels a viewer to take part in the interpretation of a message. This strategy of visual disorganization was embraced and legitimized by design schools such a the Cranbrook Academy of Art:

The Cranbrook theorist's aim, derived from French philosophy and literary theory, is to deconstruct, or break apart and expose, the manipulative visual language and different levels of meaning embodied in design.[22]

This visual language conditions readers to approach text differently – to look *into* a two dimensional space (page or screen) in order to decipher meaning. Put somewhat differently, Richard Lanham argues in *The Electronic World: Democracy, Technology and the Arts*, that we now look "at" art rather than "through" it.[23] Similarly, readers look "at" text because type designers go through pains to ensure that their fonts are not overlooked in the reading process. Consider Brody's description of his typeface, State.

I wanted to take the role of typography away from a purely subservient, practical role towards one that is potentially more expressive and visually dynamic. There are no special characters and presently no lowercase is planned. The font is designed to have no letter spacing, and ideally it should be set with no line space. I decided not to include a complete set of punctuation marks and accents, encouraging people to create their own if needed.[24]

Typographic deconstruction parallels Burnett's theory of "projection," which incorporates the view that words and images are not the sources of meaning. Like Burnett, contemporary designers argue that a seeing audience is not made up of receptors of images (and words), but capable of engaging in an interpretive "space." As well, they view typography similarly to the way Burnett regards imagery-that it "should address our capacity for intuitive insight and simultaneous perception, and stimulate our senses as well as engaging our intellect."[25] The layering, texturing, and overall fluidity of typography and imagery that ensues from new media technologies now affects the way we take "in" information. The self is absorbed into the act of viewing; the eye is embodied and the window is open.

The blurring of type and image is clearly a manifestation of our cultural tendency to renegotiate boundaries that were long thought to be sacrosanct. Critical discourse in graphic design over the last two decades has highlighted some of modernism's conceptual dichotomies such as "high" vs. "low," "distinguished" vs. "vulgar," and "beautiful" vs. "ugly." In fact, oppositional binary systems underlie many of modernity's claims to knowledge.

4

One explanation is that in the seventeenth century, when science became the new religion and objectivity the new god, Western civilization set out to create an ordered understanding of the world. A cultural value was secured to the notion of "absolute truth" and a new imperative was placed on the human race to uncover it. The belief in the existence of an objective truth brings with it a system of binary oppositions; for where there is truth, there is falsehood.

Apart from this core distinction, many other supposedly "natural" oppositions such as "mind" vs. "body," "reality" vs. "representation," and "objective" vs. "subjective" form modernity's ideological grid. This system was modernity's way of understanding the world and our place in it. And modern design's model of linear vision that distinguished between "inside" and "outside" was no exception. By mid-century, the belief in an objective reality was so ingrained in the way Western society produced meaning, the notion of a universal method of communication went undisputed. The fixation on logic, rationality, and closure in Western culture corresponded to an unselfconscious and linear typographic style that does not obstruct the transmission of meaning. There would be no hidden meanings, no nuances, no uncertainty. Post modern thinker Jean Baudrillard described a disenchanted world where everything must be produced, legible, real, visible, measurable, indexed, and recorded.[26]

Deconstruction in design highlights yet another one of those familiar Western binary oppositions that went unchallenged by the Modern Movement – the writing/speech dichotomy. As explained by Drucker, structural linguists privilege speech over writing because of its perceived time-based immediacy and purity.[27] Unlike the truthful spontaneity of expression, writing was viewed as an inferior copy of speech, farther removed from interior consciousness and therefore seen to contain no linguistic value. It is clear by now that modernism implicitly adhered to this distinction in its drive to keep viewers looking "through" text. In a context where speech is privileged, graphic design only makes matters worse. Twice removed from the meaning of the word, the stylized letterform strays even farther from the initial thought.

The writing/speech dichotomy was understood by Derrida as encapsulating the Western drive for closure. He argued against the distinction between "live" speech and "dead" letters which structural linguists had constructed in an effort to link truth with the voice closest to the self. Derrida showed that truth is an illusion in Western thought, since both writing and speech have no final meaning. The idea that it is not the written words, per se, but the disorganization of graphic elements that can extend meaning, is a powerful manifestation of Derrida's theory.

From a modern point of view, the design methodology of deconstruction seemed meaningless and purposeless because readability was secondary to engaging the reader and eliciting an emotional response. After all, modernists thought, what is the point of communication design if the message is misunderstood? Yet it no longer seems so absurd now that we recognize that there are ways to communicate, without making "everything speak, everything babble, everything climax."[20] Type and imagery is manipulated in order to engage the viewer and beckon interpretation, ultimately blurring the distinction between "designer" and "viewer" as well.

In our digital landscape, we do not "design and invent our world in accordance with a particular vision"[29] but reinvent our world and ourselves each time we encounter a visual message. Reading requires that we use our intellect, but deconstructed typography further encourages a "shifting movement from awareness to knowledge, to desire and its negation."[30] The eye roams, looking *into* the printed page or glowing screen, where meaning is revealed through an evaluation of the entire space. Deconstruction has not simply addressed the *look* of design but a way of *looking* at design.

When the theory of deconstruction penetrated the field of graphic design in the 1980s, it did not simply undermine the modern aesthetic, it chipped away at the underpinnings of Modernity. Ingrained binary oppositions such as "inside" vs. "outside," "subjective" vs. "objective," and even "humanity" vs. "technology" were renegotiated as designers tried to get inside the box. Since then, designers have brazenly blurred the line of legibility, underscoring the open text and confirming that the only knowable truth is that truth itself is an illusion.[31]

The notion of an interpretive text that appeared in the eighties and nineties was a distressing prospect for designers who came of age at a time when design was a means of ordering the world. Renowned designers who had long been working within Modernity's cultural constructions were not impressed by computer-generated solutions. Perhaps, like Romanyshyn, they wondered whether "technology has eclipsed the life of imagination more than it has been its realization."[32] For those designers who grew up in the modern tradition, the loss of a structured, understandable world was surely difficult to withstand. But to quote McLuhan, for all their lamentations, the revolution had already taken place.[33]

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Fellow Readers: Notes on Multiplied Language

Robin Kinross
1994

Free-for-all meaning

"It is the world of words that creates the world of things." Jacques Lacan's motto – extreme, absolute, unreal – sums up as clearly as can any single formulation the tendency of poststructuralist theorizing. Over the last twenty years the quite rarified ideas of a few thinkers in Paris have become common currency in intellectual discussion. And now, late in the day, and after they have been seriously questioned at their source, these ideas have turned up in the rude world of design. A full discussion would need to consider the ways in which this theory has been applied to typography and graphic design, with illustrations drawn both from design work and from theoretical writing. But, for the purposes of the present brief argument, this tight, self-enclosed circuit of ideas might be adequately described in a summary such as the following. We know the world only through the medium of language. Meaning is arbitrary: without "natural" foundation. Meaning is unstable and has to be made by the reader. Each reader will read differently. To impose a single text on readers is authoritarian and oppressive. Designers should make texts visually ambiguous and difficult to fathom, as a way to respect the rights of readers.

This mishmash of the obvious and the absurd goes under different names: poststructuralism, deconstruction, deconstructivism, and – more generally and much more vaguely – postmodernism. One could have a theological discussion of these terms; but not here. This essay is a loose and informal tour around some of the issues raised by deconstruction in typography and graphic design. I will wander off the path at times, believing that the academic discussion of typography, and of design in general, is too often hermetic and unreal: in unholy partnership with the proud anti-intellectualism of many practicing designers.

Let us go back to the main theoretical source at the root of these ideas about reading. This is the book known as *Cours de linuistique générale* by Ferdinand de Saussure: "Course in general linguistics." Saussure was a professor of linguistics at the University of Geneva. He died in 1913, and this book was first published in 1916. Its text is a reconstruction of lectures, based on notes taken by students and edited by some of his colleagues. This helps to explain why professional linguists-not to mention amateurs without any special competence in linguistics have found it an enigmatic and difficult text, though commentaries and improved editions have cleared up some mysteries.

Saussure dismisses the simple-minded notion that words correspond to real objects; that, for example the word "tree" corresponds to the real thing that we know as a tree. Instead he introduces a more complex notion of what he calls the sign (*la signe*). "A linguistic sign is not a link between a thing and a name, but between a concept and a sound pattern."

And Saussure goes on: "The sound pattern is not actually a sound; for a sound is something physical. A sound pattern is the hearer's psychological impression of a sound, as given to him by the evidence of his senses." Coming to the end of this discussion he proposes to substitute *concept* ("concept" in this translation) and *image acoustique* ("sound pattern") by the terms *signifié* and *signifiant*, which, in the English translation followed here, are "signification" and "signal." This pair in combination constitutes the sign.

Saussure then describes the two fundamental characteristics of a sign: that the link between signal and signification is arbitrary; and that the signal is linear in character (it occurs over time). The first of these characteristics is at the root of the debate over typography and the reader.

As one reads Saussure's remarks on arbitrariness, it is hard, I think, to disagree. He says that different languages have different words for the same concept: the animal which the French know as *un boeuf*, the Germans know as *ein Ochs*. And this is enough to prove the arbitrariness of the linguistic sign.

Two paragraphs after this, Saussure drops in a speculation about semiology, the science which, he predicts, will extend the principles of linguistics to the understanding of every aspect of human life. This is why Saussure has assumed so much importance outside his part in linguistics. A few cryptic remarks in this text became foundation stones for the semiology that was developed half a century later. semiology became part of the larger project of structuralism, worked out most notably in the anthropology of Claude Levi-Strauss. Then later gradually – semiology and structuralism turned into poststructuralisrn. The development of Roland Barthes's writing – from the scientific pretensions of the early work to his frankly poetic later prose – exhibits this transition most clearly. Poststructuralism renounces the notion of the heart, centre, or essence; but if it had such a thing (and perhaps its centre lies in its wearying championing of the periphery?) then this concept of the arbitrariness of the sign lies there. Another two paragraphs further on, Saussure says the following:

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The word arbitrary also calls for comment. It must not be taken to imply that a signal depends on the free choice of the speaker. (We shall see later that the individual has no power to alter a sign in any respect once it has become established in a linguistic community.) The term implies simply that the signal is unmotivated: that is to say, arbitrary in relation to its signification, with which it has no natural connection in reality.

It seems that the deconstructionists never read this. Or if they did read it, they never made their disagreement clear. Language, Saussure reminds us, is created by a community, and we use it within the constraints of this larger, communal understanding. In this fundamental sense, signs are not arbitrary, and we would do better to use the term "unmotivated" to describe the quality of fortuitousness in our pairing of signal to signification. So deconstruction contradicts Saussure, without acknowledging this contradiction. Certainly in its degraded forms, as in the recent typography debate, this theory very simple-mindedly asserts that there is no such thing as community, or society as Margaret Thatcher notoriously formulated it, at around the same time.

Saussure regards language as a collective, social endeavour. But typographers and other designers who share that view should nevertheless have a deep disagreement with Saussure. The language that he considered was almost exclusively spoken language. Saussure's idea of language is a very theoretical and intellectual one. It is less material even than human breath. He remarks that "a sound is something physical" Can one sense a tone of disdain here? Then he turns away from such crude materialism to concentrate on concepts and sound patterns. The diagram in the *Cours de linguistique générale* of how sounds are produced by the organs of speech is about as material as Saussure gets.

In the Cours de linguistique générale there is not even much sense of human beings talking with or to one another. It is true that Saussure's famous distinction between *la langue* (the system of language) and *la parole* (individual acts of speech) makes provision for this, in this second term. But then his emphasis falls so largely on the speaker. And if you look for the form of language that most interests typographers – the language that uses letters, characters, images, of ink on paper, of scans across TV screens, of grids and bitmaps, of incisions in stone – there is a large gap. Early in the lectures, Saussure has some pages on writing, but only to put it in its place: "A language and its written form constitute two separate systems of signs. The sole reason for the existence of the latter is to represent the former. The object of study in linguistics is not a combination of the written word and the spoken word. The spoken word alone constitutes that object." This may have been a revolutionary attitude to adopt then: linguistics had been shaped as a study of language in its written forms. But its legacy has not been helpful to any discussion of the material world of the making and exchange of artifacts: the world to which typography belongs. The wish of semiologists, to study and explain the social world, suffers from this crippling weakness: it has no material foundations. So, after his brief discussion of writing, Saussure confines himself to spoken language. Indeed he uses the word "language" (*la langue*) to mean just "spoken language."

Some attempts have been made to correct the blindness of linguistics to writing. From within linguistics itself, one could cite the work of Josef Vachek, and maybe others. From a vantage point outside linguistics, the English anthropologist Jack Goody has produced a stream of books and essays on writing, understood in its full historical and material sense. *The Domestication of The Savage Mind* may be his most accessible and directly relevant book for typography. Goody here points forcefully to the distinctive properties of written language as a system apart from and in mutual reciprocity with spoken language. His work also has the distinction of examining ways in which writing may be configured other than as continuous text: in tables, lists, formulae, and other related forms for which we hardly have an agreed descriptive terminology. These systems of configuration may be used almost unthinkingly, every working day, by typographers, editors, typesetters, and typists. And yet discussions about reading, legibility, print, and the future of the book seem to know only continuous text (a page of a novel, most typically) as their object of reference. The real world of typography is far more diverse and awkward. If reflection on what is there before us is not enough to persuade semiologists about the reality and difference of written language, then a reading of Jack Goody should be persuasive. Afterwards it will be impossible to parrot Saussure on "language."

3

Shared copy

The recognition and analysis of written language is an essential correction to the Saussurian theory, but it needs to be developed further. There is writing and there is printing: two different phenomena. Writing exists in one copy; printing makes multiple copies of the same thing. Yes, you can duplicate writing: you can photocopy it or photograph and make a printing plate from it. The more exact difference is between writing and typographic composition of text. But some such differentiation must be made: between the written and the typographic/printed; or, more widely (to include film, TV, video, tape- and disc-stored information) between the single and the multiple.

Semiology, based on an abstract notion of language that does not recognize the independent life of writing, is no help here. Theorists who do discuss "writing," but just as some unified, undifferentiated sphere of visible language, may have a tool of analysis. However, it is a blunt one, which cannot deal with multiplied language.") Although here one should remember that this discussion is being conducted in English, and in this language a rather clear distinction is made between "writing" and "printing." But, for example, German has *Schrift* as a common term between writing (by hand) and printing (with a machine). Whereas in English, one speaks of "writing" and of "type" (i.e., words with quite different roots), in German, one speaks just of Schrift, or perhaps of *Handschrift* and *Druckschift*. As if to confirm the distinction that English makes, one can judge typographic innocence in an English-speaker by the extent to which they muddle "writing" and "printing?" Thus: "I like the writing [i.e., type] on that record cover." Or: "please print your name and address" (i.e., write in capital letters).

Theorists of spoken and written language cannot divorce their subject from its place and time. Thus Jack Goody's main field of interest has been in Africa and the Near East, and in ancient societies. When Goody touches on European or modern societies, he is alert to the differences introduced by printing; but for the most part he can properly concentrate on written – handwritten – language.

From within the world of typography, Gerrit Noordzij has been a productive and powerful theorist of writing, which he usually takes to include typographic composition of text: "typography is writing with prefabricated letters." This definition is offered as .in alternative way of thinking, within the context of a discussion of graphic design and typography as processes of specification and worldly intervention between texts, commissioners, printers, and producers. Noordzij's wish to subsume typography within writing is the purest piece of dogma: an essential item of mental equipment for a master scribe, lettercutter, and engraver, whose main focus is on the minutest details of letters and their production. But here, in this essay, our focus is on the world that Gerrit Noordzij sees when he puts down his magnifying glass and picks up his telephone: the social world of producers and readers. In this domain, typography and writing are essentially different activities.

Typography deals with language duplicated, in multiple copies, on a material substrate. Here we can add in screen displays, and any other means of multiplying text. And to "text," we can add "images" too: the same point applies. The exact repetition of information is the defining feature of multiplied text, and it is what is missing from writing. The historical elaboration of this perception has been made most thoroughly by William M. Ivins in his *Prints and Visual Communication* and by Elizabeth Eisenstein in her *The Printing Press as an Agent of Change*. If printing was not, as Eisenstein sometimes seems to suggest, the lever of change in the history of fifteenth.- and sixteenth-century Europe, it was certainly a fundamental factor in the changes that took place then. Printing could for the first time provide the steady and reliable means for the spreading and sharing of knowledge. Science and technology could be developed, ideas could be disseminated and then questioned. With a stable and common text for discussion, a critical culture could grow. Argument had a firm basis on which to proceed.

4

The emphasis of historians of print culture, such as Eisenstein, has tended to be on books, partly perhaps for the mundane reason that these are the printed documents that survive most abundantly. It is certainly harder for a historian to investigate newspapers or street posters: harder to locate surviving copies, and to consider their effects. Indeed this branch of history has become known as "the history of the book." A book is, most characteristically, read by one person at a time, and often that person will be alone. One can counter this perception by recalling the practice-now declining – of reading aloud, in churches, in schools and other institutions, and in the home. Texts are also read alone in public: on buses, in parks, in libraries. So reading often has a visible and apparent social dimension. But its truer and perhaps more real social dimension lies in the reading that happens when one person picks up a printed sheet and turns its marks into meaning. The page – it could be a screen too – is then the common ground on which people can meet. They may be widely dispersed in space and time, unknown and unavailable to each other. Or they may know each other and come together later to discuss their reading of the text. Then the social dimension of the text may become a group of people around a table, pointing to the text, quoting from it, arguing, considering.

A text is produced by writers, editors, and printers. With luck, if they keep their heads down, designers might find a role somewhere here, too. The text is composed, proofed, corrected, perhaps read and corrected further. Then it is multiplied and distributed. Finally it is read alone but in common, for shared meanings. When one starts to think along these lines, the semiology of texts and images doesn't seem to help much. Yes,"signification" can be identified as part of a larger process. And within this small part, what of the "arbitrary link" between signification and signal? Saussure's too-little noticed suggestion that "unmotivated" is a better term than "arbitrary" helps because "arbitrary" is not what typography is about at all.

The juxtaposition that one finds happening in typography is easy to grasp. It is the link between a keyboard and a monitor; between manuscript copy and a laser-printed proof, between information on a disc and on sheets of text on film; and finally, and differently, between the page and the reader. The links between these pairs are, we try to ensure, anything but arbitrary. Correcting proofs, with its attempt to turn "arbitrary" into "intended," can stand as the clearest instance of this defining characteristic of typography.

The argument made here is that deconstruction and poststructuralist theory can't account for the material world. The only material it knows is air, and its foundations are built not even on air, but on the entirely abstract and intellectual. Certainly, when it takes on typography, the huge mistake that poststructuralist theory makes is not to see the material nature of typographic language. Here screen display, because it is indeed so fluid materially so probably should be considered separately. But certainly in printing, language becomes real and materially present: ink on paper. Here lies the responsibility of the designer of printed matter: to bring into existence texts that will never be changed, only-if one is lucky-revised and reprinted. The idea that design should act out the indeterminacy of reading is a folly. A printed sheet is not at all indeterminate, and all that the real reader is left with is a designer's muddle or vanity, frozen at the point at which the digital description was turned into material. Far from giving freedom of interpretation to the reader, deconstructionist design imposes the designer's reading of the text onto the rest of us."

This argument against poststructuralism in typography is not directly about style, nor is it about tradition and breaks with tradition. It is a social argument. Saussure's formulation, already quoted, that "the individual has no power to alter a sign in any respect once it has become established in a linguistic community" makes the point firmly. Too firmly, because it seems to leave out the creative aspect of language, of syntax especially, and of the ways in which every one of us mints these signs freshly, with new meanings, every day.

The theme of language as the possession of a community was developed by Benedict Anderson in the course of his book *Imagined Communities*. This book is one the handful of general works on history and politics that should be dear to typographers because it takes notice of printing; in fact printing is at the heart of Anderson's thesis. In one chapter Anderson weaves together the rise of capitalism, the spread of printing, the history of languages, and the "origins of national consciousness." Arbitrariness is acknowledged. He writes about alphabetic languages, as against ideographic: "The very arbitrariness of any system of signs for sounds facilitated the assembling process." But, unlike the poststructuralists, he does not stop there. "Nothing served to 'assemble' related vernaculars more than capitalism, which, within the limits imposed by grammars and syntaxes, created mechanically-reproduced print-languages, capable of dissemination through the market." But this is not a reductive account of mere capitalist exploitation. Anderson continues:

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These print-languages laid the base for national consciousness... they created unified fields of exchange and communication below Latin and above the spoken vernaculars. Speakers of the huge variety of Frenches, Englishes, or Spanishes, who might find it difficult or even impossible to understand one another in conversation, became capable of comprehending one another via print and paper. In the process, they gradually became aware of the hundreds of thousands, even millions, of people in their particular language-field, and at the same time that *only those* hundreds of thousands, or millions, so belonged. These fellow readers, to whom they were connected through print, formed, in their secular, particular, visible invisibility, the embryo of the nationally-imagined Community.

This "imagined community" may be difficult for some people to grasp, particularly if they live within the community of one of the dominant languages of the world. But even in the English speaking metropolis where these words are being written, it can be understood and felt. Greek, Italian, and Irish newspapers are sold at corner shops in this neighborhood, serving their readers here as conductors or lifelines out into the larger sphere of their linguistic-cultural community. This may describe the case for some, probably older readers. For others from those communities, and for us too-the mother-tongue English speakers-the local weekly newspaper is the place where we come together, where we read the neighborhood. The activity of reading, as Benedict Anderson puts it, may take place in the lair of the skull," but it has this social extension. We always read in common, with fellow readers.

Places and nets

Some qualifications need to be made to this argument. I have been stressing the "in-common" element of reading, against the idea that this is a wilful, arbitrary process, without an intersubjective dimension. But as an extreme of "in-common" reading, one thinks of conditions in totalitarian societies. In China at the time of the Cultural Revolution, Mao Zedong's "little red book" became – despite its praise of contradiction and dialectics – the emblem of a society in which an attempt was made at coercion even into feeling in unison. The book was a badge, as well as a manual of "correct thinking." Like the trim, beautifully made jackets into whose breast pockets it slotted, the "little red book" was a model of fitting, unobtrusive design and production; but this uniform became oppressive. The project of complete, totalitarian standardization is inhuman, impossible, and will always eventually collapse. After a while, people rebel.

To the list of the nondeterminable tendencies in reading, we can add that texts age and travel, or their contexts change both in time and place. Each generation, as well as each person, will find different meanings in a text. Much that is fresh in writing and thinking comes through recovery of old texts, and through reading them against the grain of current orthodoxy in an attempt to discover the original habits of thought and language in which the work was written.

Thus among the freshest of recent tendencies in music has been the uncovering of "early music," by the attempt to understand and re-attain its original conditions of production. But, against any idea of static and finally knowable pieces, it is clear that there can only be performances of their time and place. Take the example of J. S. Bach's *Matthew Passion*: "authentic performances" in the 1990s differ markedly from those in 1970s. The most moving and convincing readings are those that-perhaps just through their concentration on "the work itself" – speak more directly to us. This was certainly the case in the recent "performed" version of the work. This production discarded the conventions of the concert performance (white ties, tails, diva dresses, upright posture) – often then uneasily situated in a church – and joined the work instead to the sphere of the everyday reality of the audience (jeans and sweaters, gestures and perambulation). Somehow this helped set free the emotional power in the Passion story, especially for the nonbeliever, for whom the work may otherwise remain a long-distance and largely aesthetic experience. The audience, grouped around the action in stacked scaffolded seating, entered the event more intimately than is usual. The acting-out was quite limited: a touch on the shoulder, a gesture of the head, and not much more. But just in this very constraint it gained in effect. One could point to some historical legitimation for this performance (the work was felt to be surprisingly theatrical and operatic by its first audiences in Leipzig in the 1730s), but this was at most a starting point rather than a complete program to emulate or recreate.

The "reading" that is given before an audience gathered under one roof-or even that is broadcast on television-is, of course, a different matter to the reading that is the concern of this essay. Although, by comparison and contrast, it may illuminate. The director of the performance, in collaboration with others, presents an interpretation, a reading. We the audience receive it and interpret that interpretation, and our attention interacts with and may affect this interpretation. Afterwards, with others who have been there, we consider, discuss, develop, modify, revise our interpretations. These have been different experiences, maybe quite wildly different, if members of an audience bring very different assumptions and beliefs to the event (say, people of different religious beliefs at the

Matthew Passion). This may be why theatre can be so vivid an experience in small communities, where audience members have shared pasts and a sense of who each other is. And it may be why theatre in a large city-however technically assured-can be such a desolate experience. Whatever the composition of the audience, there is a common event by which to measure. And the sense of community that may be engendered at such a performance is, of course, what makes the difference between public performance and private reading. But joint reflection over something that has been shared can happen with both these experiences of watching and of reading. Both have public and private dimensions, if in different measures.

"The truth lies somewhere in between" may be a truism, but one that is also true in this case, or in these infinite particular cases of people reading texts. One only has to think of any reader turning the pages, misunderstanding, turning back to see what was said before, sneaking a look at the last chapter, being distracted by a phone call or the demands of a child, perhaps falling asleep and dreaming around the text, and then returning to this business of turning marks into meaning. The process is individual and unpredictable. As if we needed a designer to make this so! And yet the text is there as an irresistible and multiple fact: a common ground. For any writer, the intersubjective dimension of reading comes vividly to life when one hears from a friend that they have been reading something you wrote. Then you may reach for your copy of the text and read it again, but this time in the voice of that other reader, turning the words over, wondering what she or he made of them.

Computer-based means of transmitting texts are no doubt introducing fundamental changes to the model that is here taken as characteristic of reading. Text and images organized as nodes on a network, as in hypertext, or intercut and layered with other information and other kinds of media (animated images, sound) – this provides a different experience from that of reading a printed page. And here the deconstructionist rhetoric about the active reader may have more truth in its descriptions. At least here there really is fluidity and the possibility of change, as there hardly is in printed deconstruction.

Debates over the coming of the "electronic book," at the expense of the printed one, have always seemed a little futile. Futurist visionaries tend to underestimate the dimensions of bodily comfort and cost. Reading cheap small books in bed can still be a great pleasure. The dead duck of "legibility" is hardly the issue here. Much more critical apart, of course, from content – is page size, weight, openability and flappiness, lighting, temperature of the room, and how many pillows you have. Sitting in an upright chair at a screen brings a more serious air to the processes of reading, and there would be some sense of contradiction in reading a thriller that way. To read an intimate letter sent over the wires to your terminal may also feel a little odd, The present upsurge in this mode of communication must bring large changes. One already noticeable effect is that an informal, unedited style which goes with private communication is spreading into multiplied communication. Electronic mail is fine, but not if this becomes the model for all communication. The formality that multiplication and publication demands of text carries a social function. And the social necessity of "in-common" reading, which was won for us by printing, remains-even if it is now carried by other ways of transmitting text. If this is lost, then we really will all be reduced to "individuals and their families."

Extract from the text originally published as: Fellow Readers: Notes on Multiplied Language (London: Hyphen Press, 1994), reproduced in Looking Closer 2, Allworth Press, 1997. Annotations and footnotes have been excluded from the version here.

Am I Type? Type on Screen: an uneasy relationship from the beginning

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Introduction

I bring into the light of day the precious stores of knowledge and wisdom long hidden in the grave of ignorance. I am the leaden army that conquers the world: I am type!

This was the declaration of the 1933 broadside designed and written by the renowned typeface designer Frederic Goudy. It is an arresting oratory like homage by Goudy to the predominance of type in the printing and design hierarchy of his day. Reading it now, however, it brings up many questions and contradictions, that Goudy could never have envisaged, arising from the evolutionary twists and turns that typography has undergone in the last twenty years, in particular its emergence and application within screen based environments such as film, television, desktop computers and mobile communications.

This paper will focus on the nature of the evolutionary change that typography is undergoing in screen based contexts and will begin to examine some of the problematic issues for designing typography that have arisen as a result of this emergent transition from paper to screen. In this presentation, I will attempt to:

• Define screen media and contexts for typography

• Make an analytical comparison of print typography to screen based typography.

Today's presentation aims to clarify and define the current context within which my research is situated, by establishing and defining the nature of what 'screen' means in relation to typography and by beginning to examine existing typographic design principles for practice.

Definition of screen media and context for typography

New media theorist Lev Manovich describes contemporary western society as 'a society of the screen' where much of our daily lives are involved with screens in one way or another, whether its working, reading a newspaper, watching movies or communicating with friends and relatives.' Screens have rapidly become our primary means of accessing information. Manovich claims that as new generations of both computer users and computer designers grow up in a media rich environment dominated by television rather than by printed texts, they are preferencing the language of the screen over the language of print. This is the backdrop against which typography in screen based media will be examined.

Definition of screen

Design critic and author, Jessica Helfand describes the screen itself as possessing a 'complex and variable presence in our daily lives: as a window, linking public space and private space; as an interface, providing closure and exposure; as a mirror, reinforcing the self and enabling reciprocity across electronically linked phone lines' 2 This description highlights the inherent problem of defining 'screen' as either a single entity or as having a single purpose. 'Screens' appear to extend their range from painting to cinema screen, from computer desktop to equipment control panels, and from mobile phones to public information displays.

Just as the medium itself is difficult to classify and understand, so too are the multifarious challenges for typographic design within this emergent form.

Lev Manovich's genealogy of the screen provides a useful analysis for the purposes of situating screen typography in this research.

He describes the first stage of this development, as the 'classic screen', a flat, rectangular surface intended for frontal viewing, that exists in our normal body space and acts as a window to another space. This other space (inside the screen) has a different scale to our normal space and its proportions (landscape and portrait) have remained the same for centuries from painting to computer screen.

The second distinctive development, Manovich calls the 'dynamic screen', which emerged approximately one hundred years ago and retains all of the qualities of the classic screen except the image it displays changes over time. It brings with it a certain 'viewing regime' that strives for complete illusion, asking the viewer to suspend their disbelief and identify wholly with the image on screen. The viewer must concentrate completely on what they see in the window and the image completely fills the screen. Manovich notes that the dynamic screen is aggressive in its presentation because it functions 'to filter, screen out, take over, render non existent what is outside of the frame`. Typography on the dynamic screen in the form of cinema and television will form part this research context.

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The third, and most contemporary, stage in Manovich's genealogy is the 'real time screen'. It encompasses some of the qualities of the classic and dynamic screen, but is fundamentally different for a number of reasons. Firstly, it shows multiple, overlapping and co existing images at once and the viewer (now termed user) no longer has to concentrate on one image but on many at the same time and different parts of the image (or windows) can correspond to different moments in time. Secondly, the images can change over time in real time as users decide and control what information they want to access and how they want to view it. Both of these qualities are fundamental principles of the GUI (Graphical User Interface), which has become a main property of the real time screen.

The GUI completely disrupts the viewing regime associated with the classic and dynamic screen. On the real time screen, the participation of viewers or users can range from selecting and editing, to reading and viewing, to creating and publishing. The multifarious and customisable nature of viewer/user activity in relation to the real time screen creates an immense density of differing design challenges for typography depending on the type of usage context in question.

Perhaps, it is for this reason, according to new media scholar Jay David Bolter, that the ultimate goal of GUI design seems to be the improvement of the technology to the point of invisibility, so that it puts the viewer or user in touch with reality without the interference of an interface. Bolter describes the quest to create an invisible interface as the search for 'transparency', which he deems an endless pursuit because it is redefined with each new technology.

Types of screens

This research primarily concerns itself with the dynamic and real time screens and the many guises and hybrids that they manifest. I have begun the preliminary development of a typology of the screen, which aims to focus on three strands of screen development plotted across time. They are; technology types of screens and types of display technologies for rendering typography; usage contexts including those specifically related to typography; and finally, seminal practical work ground breaking examples of screen work that demonstrate aspects of the above two strands. This typology remains very much a work in progress and I have as yet to address the third aspect.

Looking at the first strand, it is clear that the tension between technological advancement and qualitative display can often be a trade off resulting in contradictory development. For example, as screen technology strives to match the scalability and portability of paper, the quality of resolution and image display often seems to take a retrograde step. There are stark similarities between the typography on an 1980's VDA monitor and to mobile phones of the late 1990's. The search for improved and higher resolution rendering technologies means equipment may also be more expensive and take longer to reach mainstream use. Plasma television screens versus CRT television screens are one such example. Additionally, different strategies to best render typography on screen have evolved in parallel with computer display technologies, including Post script and anti aliasing, TrueType, OpenType and most recently Microsoft's ClearType which is specially developed for improving the legibility of typography on LCD screens.

The relentless march of technological advancement also means that standard formats are constantly being revised and remain in a state of flux. In this respect, it may seem futile to attempt to devise a typology of screen display and rendering technology, except for the fact that the examination helps to identify consistent screen characteristics that seem independent of resolution or device.

Screen based contexts for typography

I have identified screen based typography in three broad contexts, cinema, television and computer and telecommunications. It is worth looking at each one in detail.

Cinema

Typically characteristic of cinema is the large scale of the screen and the audience, and for the most part, the purpose of the representation on screen is entertainment, usually in the form of a narrative film. In this context, typography has a rich tradition, dating back to the earliest silent films where title cards communicated key dialogue or events in the narrative through to the golden age of film titles design in the 1960's (spearheaded by Saul Bass, Pablo Ferra and Maurice Binder) and its resurgence in the 1990's (with Kyle Cooper's landmark mini narrative title sequence to Seven). Film studios and director's continue to capitalise on the visual impact of the title sequence to sell the content of the film, convey information and establish the film's identity and mood. Typography in this screen context might be described as largely image based and interpretative and the audience activity here follows the viewing regime of the dynamic screen.

Television

In many ways, traditional television viewing echoes the regime of cinema, albeit on a smaller scale the primary purpose remains social entertainment, although educational, information based programmes and advertisements form a significantly large part of television's transmission output. Typography on television incorporates opening sequences, channel idents, listings, news, information and advertising graphics. Latterly, with the advent of interactive television, typography also plays a significant role in the televisions interface representation. The viewer sits some distance away from the screen and operates the television with a remote control.

Computer

The third and most complex context for screen typography relates to the computer platform and its integration with telecommunications. Broadly speaking, a single desktop computer with Internet accessibility probably typifies the nature of representation and usage for typography in this area which may also incorporate a diverse range of mobile PDA's. Typography in this context operates in the realm of Manovich's real time screen, where the viewing regime is inextricably bound up with the GUI and the type itself may be dynamic, static and changeable, either by the publisher or the user. Typography on the computer screen has many functions and may appear in many forms, as an integral part of the interface, as web page content, as a dynamic sequence, or as an editable document. The nature of its representation may be image based or information based, it may be interpretative and expressive or factual and objective.

The viewer or user may be the audience or author of a computer text, actively watching and reading it, or writing and publishing it. The integration of telecommunications with the computer make it possible for a single user at a single screen to communicate and connect with a multitude of other single users at single screens. This creates a multifarious and distributed community of authors and audiences, which in many ways are not unlike the audiences for cinema and television. The most significant difference is that author and audience may engage in direct dialogue exchanging points of view as well as content.

By uncovering some of the underlying properties of the types of screens that typography may inhabit, it makes it easier to see how these properties may be projected on to, and reflected in, the design of typography on screen. This will form the basis of the next section of this essay.

Analytical comparison of printed versus screen typography

Typography has been rooted in the tradition of the print medium for over half a millennium and it is only in the last twenty years or so that textual form has become prevalent on screen. The challenge for typography lies in trying to reinvent itself in the image based medium of the screen that seems at odds with its print origins. This uneasy relationship between typography and screen might be further examined by a critical comparison of the nature and properties of print typography to its screen based counterpart.

I have chosen to focus this comparison under the four key headings; format, media, reading experience and typographic representation.

Format

If we accept that screen and paper are distinctively single mediums (despite the variety of different types of screen and paper available), the question of format, and subsequently of scale and proportion, is a crucial design consideration for typography in either context. Similarities of scale are apparent, as we might compare the scale of the cinema screen to a billboard, or the mobile phone display to a business card, or even the desktop monitor to a standard magazine publication. (Note we are not comparing contexts of use here). There are possibly infinite variations of the scale and proportion of paper formats, and types of paper, that a designer has the control to specify. In comparison, the number of screen formats available is very limited, and is wholly determined by technological manufacturers. Designers of screen based texts have to carefully examine and work within the constraints of a particular screen format.

In the print medium, a single page of content is displayed on a single piece of paper, and additional pages may be added as content increases in scale. In screen based media, all content is displayed within a single screen. This has necessitated the design of a variety of display and access interfaces that try to facilitate differing amounts of content.

The key difference between screen and print formats is highlighted in the interface form through which we access and understand these formats. In the print medium, there has been little change to the page/book interface, from tableau, to scroll, to codex, in over five hundred years. Despite differences in scale or type of paper, the interface for print is pretty much standardised. It is also taught to us early and is very easily learned. We understand how to design and how to read typography in almost all printed formats.

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In contrast, as outlined earlier in reference to Manovich's screen genealogy, the interface form of the screen has changed dramatically over the course of its development. We have moved from watching the single moving image of the dynamic screen to multiple and varied activities with the real time screen. Each type of screen (mobile, computer or television) and display technology may have an unique interface, and the quality and properties of typography may vary greatly in each. MIT scholar David Small refers to this as a 'complexity barrier' that must be surmounted if typography on screen is ever to rival its printed counterpart.'

Media

A comparison of media use in print and screen contexts seems straightforward. Print uses text and image. Screen encompasses text, image, sound and motion.

Given typography's printed tradition, the design and integration of typographic and image based forms has been thoroughly explored and documented in its five hundred year plus history. In comparison, the design of typography in a multimedia environment that includes sound, motion and interactivity is still evolving. The core contrast here perhaps, is that each media type (text, image, sound, animation) has its own set of unique properties and principles governing its design application. The design of typography in a two dimensional print environment has been well traversed and a broad knowledge base of scholarship established. However, this does not hold true for the design of typography in three¬ dimensional and four dimensional (time based or real time) environments, or for type that is auditory or interactively responsive. In her essay 'Electronic Typography: The New Visual Language', Jessica Helfand considers that to adequately develop this new typography, 'we might do well to rethink visual language altogether, to consider new and alternative perspectives'.

A detailed critical examination of the practical design principles for typography that encompasses the diverse media characteristic to the screen will be the main focus of my future research.

Reading experience

I have chosen the term 'reading experience' to refer to issues relating to the audience interaction with a text, in both print and screen formats. Traditionally readability has referred to how easily a text can be read, while legibility relates to whether or not a text can be read. A wide range of scientific, psychological and typographic research has been published on factors affecting the legibility of typography (Tinker 1963, Dillon 1992, Dyson 2002). There is less formal material available on the study of readability. The scope of readability in this comparison describes the overall sense of the experience of reading a particular text.

Printed material can be read anywhere the reader chooses, on a bus, at a desk, in bed, at the beach. While reading print, the reader's eyes move over the surface of the page, scanning the information, relying on the contrast and rhythm created in the typographic composition to guide them through the text. The surface of the page is still and the typography is static and fixed, presented exactly as the designer had intended, on carefully chosen stock and in a particular type design setting. The reader may hold the printed piece in their hands and control how much time they wish to spend reading a particular page. The scale and nature of the physical paper format will also tell them at a glance how much text it contains. The text is already written and its order decided (executed by the author), the story is waiting to be read. The pace of reading and contemplation of the text is at the reader's discretion. As the reader becomes immersed in the 'reading space' inside their head', the book interfaces gradually disappears.

Let's compare this to the experience of reading on screen. The reader's eye may move or it may be transfixed, scanning over and staring at the light patterns of text reflecting outward from the monitor's screen. The text may be static or dynamic, fixed or changing depending on the nature of representation, whether it is linear and time based, or non linear and real¬ time based or perhaps even a combination of both. The visual presentation on the surface of the screen will mostly likely be moving, either by animated presentation, or reader interactivity via the GUI such as selecting, opening, closing, scrolling etc. The reader is more likely to sit in front of the screen and the physical interaction with the text will be usually via a mouse, keyboard or stylus. The reader is dependent on the customised interface of a particular screen text to determine its scale and order. The reading experience on screen may combine watching, reading and exploration through the interface. In this context, it seems unlikely that the reading interface will metaphorically disappear as it does in print.

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Recounting Bolter's and Manovich's earlier claims, in a context where the interface is not 'transparent', and the 'viewing regime' is disrupted by the GUI, it is less likely that a truly immersive reading experience comparable to print will emerge. Victor Nell, who has conducted one of the few empirical studies on readability, states the extreme case of immersive reading as 'ludic reading', (from ludo in Latin, meaning to play) or reading for pleasure. According to Bill Hill, head of Microsoft's Advanced Reading Technology, if the problem of ludic reading could be solved on screen, to make it as comfortable and natural as it is print, then the same basic principles would apply to any other reading task on screen.

Typographic representation

Typeface

Typography in printed form can be reproduced to the highest resolution and every detail and nuance of a typeface will be rendered accurately. Consider the average 'book quality' image¬setter uses 2,500 x 2,500 dots per square inch, or over 6 million bits of information. The average computer screen offers less than 100 dots squared (usually 72dpi or 96dpi), which adds up to about 5,000 bits of information. This is less than 111000' of the resolution of the common book, and considerably less than a even a common 600dpi office laser printer. 6 Trying to render the detail of a serif typeface, especially at a small point size on screen is virtually impossible. It is hardly surprising that typefaces on screen seem like poor approximations of their printed counterparts and that legibility remains a key concern.

To date, most research into screen typography has focused specifically on developing better ways to render type within the low resolution display environment of the screen. These include technologies such as Postscript, TrueType, OpenType and ClearType, or the design on screen specific typefaces, such as Verdana and Georgia (by Matthew Carter) or the wide range of pixel aliased fonts. In 2006, Microsoft is planning to ship six specially commissioned typefaces designed for maximum screen legibility with its new version of the Windows operating system.

Screen legibility has been well researched by Dillon and more recently Dyson, the findings of which are too numerous and detailed to cite here. In summary, the appropriate choice and size of typeface (sans serif with large x height), the number of words in a line, spacing between words and lines of text, the colour of text against its background etc, remain as much a consideration for screen typography as they do for print. The parameters affecting these issues are of course different in each medium. Other aspects specific to screen include rendering issues such as antialiasing, the impact of dynamic elements and the ability to navigate a text interface. Dyson notes that the term legibility might be extended to include issues of 'usability'.'

Composition

It is worth comparing the differences in typographic composition between print and on screen. As mentioned earlier, a designer can specify any format they wish in which to compose their design. Once chosen, the edges of the page become a definitive boundary governing the placement of typographic elements. The 21) flat surface of the page focuses relationships of size and placement on the x and y axis.

On screen, the designer will usually work with a number of fixed sizes or resolutions that relate to specific screen types, such as computer (800x600dpi, 1024x768dpi) television (PAL 768x576dpi or DVPAL 720x576dpi) or mobile (l20xl30dpi up to 640x480dpi etc.). For the most part the proportions and aspect ratio on screen is 4:3 landscape orientation. This is the frame within which typography can be composed on screen. Considering how to compose multiple pages of text in the single frame of the screen is the key difference to composing type in print. Designers on screen have to consider dynamic strategies for composition such as animation, layering, scrolling and scaling. The time based nature of these strategies also means that the composition frame appears to be the viewing window that captures different moments of the composition. The screen edges are not the boundaries, as the composition begins and continues outside of the frame, passing through in a form guided by animation or viewer interaction.

The screen also possesses an intangible quality because of the virtual space inside it. It means that composing type in this virtual space can be considered on the x, y and z axes. Time might also be considered the fourth axis. The complexities of managing typographic elements across these four relationships is a challenging contrast to the two dimensional composition of print.

Hierarchy and Structure

Following naturally from composition is a discussion of typographic hierarchy. Traditionally designers have used the nuance of typographic expression via different weights and size, coupled with logical, and linear ordering to denote the informational hierarchy within a printed piece. In contrast, there is a limit to what the pixel can render on screen and the nuance of typographic expression, especially hairlines and serifs, are inevitably compromised. The advent of 'hypertext', which Bolter calls 'the typography of the electronic medium', has also challenged the traditional linear ordering of text, making it possible to create layers of additional meaning accessible through programmable associative links within the text. Hyper linking between different texts facilitates multiple entry and exit points to and from a text, resulting in a seemingly non linear structure. It can often be difficult for users to understand and follow the hierarchy (if indeed one exists) of a digital text. This variable form coupled with the dynamic and aural properties of multimedia combine to create a confusing palette for the designer to choose from. Jessica Helfand aptly sums up this challenge questioning the value of typographic choices such as bold and italics, 'when words can dance across the screen, dissolve, or disappear altogether?''

Outside of designing the form of text on screen, designers should acknowledge that the culture of screen is different to the culture of print. In her book, Thinking with Type, Ellen Lupton, stresses that the impatience of the digital reader arises from the cultural habits of the screen where users expect to feel 'productive' not contemplative, 'they expect to be in search mode, not processing mode'. Typography in this context seems to be more about alleviating the experience of prolonged reading on screen rather than encouraging it, as designers are expected to serve up byte sized chunks of tantalising typography to whet the appetite of browsing readers.

With this in mind, designing typographic hierarchy on screen is not as seemingly straightforward as it is in print.

Delivery

Print designers can generally feel secure that the finished manufacture of their design will manifest itself exactly in the same form they specified. They have detailed control over each stage of the design and production process, with the exception of final printing, but even then a conscientious designer will press check the first proofs of a job to ensure its accuracy. It is difficult to compare this process to the design and production of screen typography because of the multifarious nature of both screen hardware and design contexts.

For example, a web designer has to consider a range of technical constraints; what screen friendly typeface to use and what development environment (html/asp and css, or flash and font embedding) to produce the design. After these decisions are made, it is likely that a designer will rely on a programmer to build some, or all of their design on screen. Assuming this reaches a satisfactory conclusion, the designer still has no control over who will access the website, how it will be accessed or if the audience will access and view the design in the way it was originally conceived. Because the final delivery mechanism is variable and the viewer may also intervene in it's the final transmission, designers must be willing to compromise absolute control over the final design outcome and to perhaps to consider design as specifying the optimum set of aesthetic variables to work in this framework.

If we think back over the issues discussed in this paper, and then consider Goudy's broadside 'I am Type', one can't help thinking that the qualities of type on screen seem far removed from Goudy's personified description of a leaden army of printed type. One wonders, if Goudy were considering today's army of typographic bits on screens that are pervading the world, and writing a similar piece whether he wouldn't entitle it Am 1 Type?

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