TYPOGRAPHIC Labyrinths: MutABLE TyPography anD iTS
connECtion to the SEMIOTIC MODEL q

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DEDICATION

This project is dedicated to Andy Ajello who was with me through every minute of this stressful, crazy and beautiful experience. His unwavering patience and ability to discuss semiotics, typography, and other esoteric topics at great length always amazed me, and my gratefulness for his support during this time is impossible to quantify.

This project is also dedicated to my amazing family and friends for all of their love and support.
EPIGRAPH

“What is the point of being legible, if nothing inspires you to take notice of it?

Wolfgang Weingart”

“As the first industrial commodity, the printed book was portable, repeatable, and uniform. Unfurling today across the networked horizon, text is now mutable, interactive, and iterative, no longer melded to a solid medium. Yet as a means of exchange that ebbs and flows through communities, text remains more than ever an essential ‘natural resource’ that offers access to participation in a world economy and a shared public life.”

_The Making of Typographic Man_, p. 114

“I am an investigator. I make probes. I have no point of view. I do not stay in one position.

Anybody in our culture is regarded as invited as long as he stays in on fixed position. Once he starts moving around and crossing boundaries, he’s delinquent, he’s fair game.

The explorer is totally inconsistent. He never knows at what moment he will make some startling discovery. And consistency is a meaningless term to apply to an explorer. If he wanted to be consistent, he would stay home…

I DON’T EXPLAIN—

I EXPLORE.”

Marshall McLuhan
ABSTRACT OF THE PROJECT

Typographic Labyrinths: Mutable Typography and its Connection to the Semiotic Model Q

by
Kathryn A. Stapko
Master of Fine Arts in Art
San Diego State University, 2016

According to philosopher Umberto Eco, signifiers (signs that represent concepts) are impossible to define because every element of communication—every semantic unit—can only be understood in the context of its relationship to other semantic units. He calls this the Model Q; a recursivity difficult to visualize. He describes the concept as a boundless net in which every single point could be connected to every other point, dependent upon context and the communicator’s perception.

Yet the belief persists that the printed word is more concrete than non-printed forms of communication. Linguist Ferdinand de Saussure calls this phenomenon “The Prestige of Writing”; the falsity that written words are permanent and eternal. To demonstrate the impermanence of printed words, I designed a mutable typeface: every letter of the alphabet—both capitals and lowercase—has stylistic variations called discretionary glyphs. Thus the designer working with the typeface can choose the most appropriate glyph for their design, confident that all letters and alternate glyphs will work as a system. OpenType font software in the 1990s allowed for easier creation and use of glyph variations, and mutable typefaces have become more prominent in the last ten years.

I named my typeface Model Q because it is a metaphor for Eco’s eponymous concept; the stylistic alternate versions of each letter become more abstract as the designer progresses through them, and the final stylistic set is so abstract it is illegible. However, when the letters form a word, each letter derives legibility from the letters around it.

Using the typeface Model Q as my medium, I assert that printed language is capricious because every person that reads a text has a unique perspective influenced by culture, environment, and experiences. Therefore, no matter how clearly something is conveyed, one can never predict how another might interpret it. The forms of the letters in my typeface, just like the derivation of meaning from a text, are ethereal based on those that view them. There is no ultimate truth or meaning; all signification is derived through context—through the relationship that signifiers have to each other and to the reader.
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CHAPTER 1

SOME CONTEXT: A BRIEF HISTORY OF MOovable TYPE

Type is All Around Us

According to the Global Information Industry Center at the University of California, San Diego, in 2008 Americans consumed 10,845 trillion words, which is about 100,500 words for an average person on an average day (Bohn & Short, 2010). Typography, (the set of letters used to employ messages in text form), was the medium through which Americans consumed these words, and the increase and resulting ubiquity of portable smart devices since 2008 has meant that people have almost non-stop access to letters on a page or screen. Typography, as defined by design scholar Ellen Lupton (2011) is, “strictly speaking…the use of repeatable, standardized letterforms (known as fonts)” (p. 113). This is not to be confused with lettering, a custom-drawn set of letters used in projects such as headlines employed on a poster, on a book cover, or hand-drawn on a sign, which is not a standardized set of letterforms meant to be used in a repetitive manner en masse.

Yet despite this ubiquity, the field of typography, even amongst graphic designers, remains an esoteric field filled with complexities that most people do not consider. “I’ve never even thought about how fonts are different or that they had to be designed,” I was once told during brunch when asked to explain my thesis topic. Although most people know what a font is now, and are able to name at least one or two (usually the default fonts for whatever brand of computer they use at work or home), the words typeface or typography are usually met with blank stares in conversation. A recent social media trend poking fun at poorly designed typefaces like Comic Sans or Papyrus have brought the basic concept of type design into the public awareness at least to some extent; however, when one uses the word typography or typeface in place of the word font, a much fewer number of people know the
definition, and even fewer know the process and amount of effort that goes into designing a typeface.

Yet the pervasiveness of typefaces in all shapes and styles would lead the everyday typographer to believe that most people would be aware of fonts and their differences; surely the design of the typeface matters, when one considers the staggeringly high rate at which words are being consumed. Perhaps fewer people are aware of the intricacies of type design because the mark of a well-designed typeface is one that allows the message to jump forward, causing the style of the letters themselves to recede into the background, working only so much in that they aid in the conveyance of the message. But if this is true, why are there so many different styles of typefaces? According to graphic design scholar Peter Bi’Lak (2011) there were over 150,000 fonts available online for direct download in 2011. Does the style or flavor of typefaces matter? Based on the sheer number of fonts out there, it would appear so.

**Typeface Classifications**

Typographers refer to typefaces generally by their classifications, which is a way to situate a typeface into an historical period. Though different typographers have somewhat different ways of classifying typeface subsets, the main classifications are broken into three categories: serif, slab serif, and sans serif. Serif fonts, the oldest classification, are divided into three basic subsets: humanist or old style, transitional, and modern, “which roughly correspond to the Renaissance, Baroque, and Enlightenment periods in art and literature” (Lupton, 2010, p. 46). Slab serifs were invented in the nineteenth century for use in the advertising industry, and sans serif typefaces, like serifs, are also broken into three subsets: humanist, transitional, and geometric, which also demonstrate an evolution throughout time. Sans serif fonts, like slab serifs, were invented in the nineteenth century (Meggs & Purvis, 2012, p. 149), but did not become common until the twentieth century (Lupton, 2010, p. 46). For many typefaces, particularly in the serif and slab serif categories, the design of the letterforms mirrors the technologies of the eras in which they were invented, although with the rise of the digital revolution of the 1980s this becomes less true due to the exponential increase of new fonts designed as a result of digital type-making technology which is inherently flexible.
Figure 1. The different typeface classifications shown in typefaces indicative of that classification style. Source: Lupton, E. (2010). *Thinking with type* (2nd ed.). New York, NY: Princeton Architectural Press, p. 46. Table designed by author.

**TYPOGRAPHIC TOOLS**

Typography is an incredibly complex subject with a long and rich history that many scholars have written about in detail: detail that need not be repeated in this paper. However, as a means to provide some context leading up to the digital era of typography, a brief overview of the history of typographic technology and how the Latin alphabet developed will be useful to demonstrate the links between the forms of the letters themselves to the way in which they were constructed and printed. Writing systems other than the Latin alphabet have rich and complex histories of their own and are beyond the scope of this project.

Johann Gutenberg is credited with the invention of movable type as early as 1438, and because he had no other frame of reference, he copied the style of hand-lettered manuscripts of his time by carving the letters into steel, making molds of them, and casting the letters with lead which he then put onto a press, inked and printed (Clair & Busic-Snyder, 2005, pp. 48-49). The forms of Gutenberg’s letters were heavy and dense, and thus referred
to as “blackletter.” Gutenberg did his best to mimic the irregularities of handwritten letterforms, making the type in his famous Bible look somewhat erratic (Lupton, 2010, p. 13).


Gradually, as the printing press spread across Europe, “Humanist writers and scholars rejected gothic scripts in favor of the lettera antica, a classical mode of handwriting with wider, more open forms” (Lupton, 2010, p. 15). These typefaces were known as Humanist, and were gradually moving away from handwritten letterforms as models for their structure. In the late eighteenth and early nineteenth centuries, Bodoni’s and Didot’s fonts became the epitome of the modern style, which had a much heavier contrast between thin and thick portions of the letterforms, with much thinner and crisper serifs (Lupton, 2010, p. 17).
For 300 years, however, despite the gradual evolution of serif letterforms further and further away from the handwritten letter, the printing technology hardly changed. Though the forms of the letters themselves became more mechanical, they still remained small and static on the page, limited by the inflexibility of the lead used to form the fonts and the way that letters had to be aligned in the iron frames that held the letters in place on the press bed.

The changes in typographic technology began to evolve during industrialization in the nineteenth century. With the explosion of advertising came the need for larger letters, and printers, finding lead to be too restrictive as it could not hold its shape at larger sizes, began to make letters out of wood. For the first time since Gutenberg, the shape of the letters themselves changed drastically. “Fonts of astonishing height, width, and depth appeared—expanded, contracted, shadowed, inlined, fattened, faceted and floriated. Serifs abandoned
their role as finishing details to become independent architectural structures…” (Lupton, 2010, p. 23). This new style was referred to “fat face” and the typefaces themselves were classified as slab or Egyptian serifs. It was with the fat faces that typography first began to pick up on a more “elastic system of formal features” (Lupton, 2010, p. 23).


With the Industrial Revolution came a typographic revolution as well. It was during the twentieth century that typographic tools underwent a revolution of their own. Although Otto Mergenthaler’s linotype machine, invented in 1886, vastly sped up the typesetting process by casting entire lines of type quickly, the static nature of typography did not truly
begin to shift until around 1908–1910 when artists began to use typography for more artistic expression due to the fracturing of realism [that] sprang into prominence with Cubism and Futurism, as well as the move toward pure abstraction with Suprematism and Constructivism (Clair & Busic-Snyder, 2005, pp. 83–84). Futurists in the 1910s and Dadaists in the 1920s began to utilize collage methods in their work, challenging the linear nature of typography and using free-form layouts that pushed the edge of what was legible. And yet, typographic machines still limited typographic expressiveness. Typographers tested the boundaries of what they could do on the printing press: they formed new shapes out of combinations of letters; they printed layer upon layer to create a sense of motion and escape; they embraced asymmetry and chaos by mixing different typefaces and sizes. But the restraint remained as a result of the limiting technology. One could only do so much with a lead or wooden letter: a solid object that must be aligned on a straight grid on a press, inked, and printed one layer or color at a time.

It was not until the invention of phototypography that typefaces could finally escape the prison of their solid and concrete environments. The Photon, a phototypesetting machine designed by Rene Higonnet and Louis Marius Moyroud and produced for sale in 1954, worked by using photographic negatives of the images instead of letters cut by hand into wood or metal. This new technology, that also began to utilize computers as interfacing tools meant that designers could do things they never could do before, such as negative leading (where lines of type overlap each other), negative tracking or kerning (overlapping letters horizontally), setting type on a curve, or extending or condensing the fonts.
Figure 5. The phototypesetting machine allowed designers to stretch, overlap and twist type as they never had been able to do before. Source: Clair, K., & Busic-Snyder, C. (2005). A typographic workbook: A primer to history, techniques and artistry (2nd ed.). Hoboken, NJ: John Wiley & Sons, Inc., p. 101.

“Type could be used to create textures…because the lead did not have to be cut away by hand for these special effects” (Clair & Busic-Snyder, 2005, pp. 100–101). Because of this advancement in the 1950s, there was a boom in new typefaces because designers no longer had to carve new punches for every size of a font they wanted to create. Accompanying this boom in new typeface designs was also a vast increase in the speed with which typesetters could work.

Although phototypesetting was a major leap forward in typographic technology, no one could have anticipated the paradigm shift that happened as a result of the digital desktop revolution of the 1980s. The advent of desktop publishing software made available to the general public, as well as the invention and spread of the Internet, changed the typographic game entirely. Not only was typography different due to digitization; it became a new medium, viewed no longer on paper, but instead on screens. Typography went from being a solid medium, carved with painstaking precision and printed on paper, to a changeable thing; letters could shift, expand and contract at an instant. They could even glow with their own light, made of pixels instead of organic matter.

**The Digital Desktop Revolution**

Design historians often pinpoint the 1984 release of the Macintosh computer as the beginning of the digital era for design and typography. Computers and printers had existed before the 1980s, but the release of the Macintosh signaled a new era in user-friendly
interfaces and accessibility by all. Before the Macintosh computer, a graphic design job required numerous people:

After phototype became prevalent during the 1960s, skilled specialists included graphic designers, who created page layouts; typesetters, who operated text and display typesetting equipment; production artists, who pasted all of the elements into position on boards; camera operators, who made photographic negatives of the pasteups, art and photographs; strippers, who assembled these negatives together; platemakers, who prepared the printing plates; and press operators, who ran the printing presses. By the 1990s, digital technology enabled one person operating a desktop computer to control most—or even all—of these functions. (Meggs & Purvis, 2012, p. 530)

Suddenly, the designer had control over the typography as well, which meant they could instantaneously try different designs easily and quickly, which led to greater experimentation. “Type designers began to explore type design as a means for personal expression and communication, positioning type as an aesthetic force in the new millennium” (Clair & Busic-Snyder, 2005, p. 123).

There were specific type technologies that aided in this explosion of experimental new typefaces in the 1980s and 1990s. The first was a programming language called PostScript, which became available for general use in 1984. PostScript was revolutionary in that it enabled the mathematical description of complex forms like letters, which eventually led to fonts, to be fully scalable. PostScript Type 1 allowed for files to be outputted to multiple devices, which allowed for documents to be printed much more easily than before. It also allowed for better display of fonts both printed and onscreen by dealing with variations in the appearance of letters when displayed or printed at different sizes. In addition to PostScript, Aldus, a software manufacturer, developed PageMaker, a page-layout program that also streamlined the graphic design process, making it easier for anyone with a computer to design a document.

Two of the first designers to use new font technologies in experimental ways were Rudy VanderLans and Zuzana Licko, founders of Emigre magazine, which was first published in 1984. According to Meggs and Purvis (2012), the magazine “became a lightning rod for experimentation, outraging many design professionals while captivating those who embraced computer technology’s sense of infinite possibility for reinvigorating and redefining graphic design” (p. 533). Emigre’s experimental approach helped define and
demonstrate the capabilities of this new technology, both in its editorial design and by presenting work that was often too experimental for other design publications.


VanderLans and Licko exploited these new technologies to their full extent at the time, creating fonts that broke all of the design rules that had been followed for previous centuries. Letters were curved, distorted, broken, overlapped, stretched and mixed together, and were, for the first time, being viewed in both print media as well as on a computer screen. Licko created public-domain software called FontEditor to create digital typefaces that were at first meant for low-resolution technologies, giving the fonts, like her 1985 font Oakland, a pixelated appearance unlike any previous style of letterform. In 1990 P. Scott Makela designed the font Dead History for Emigre, which combined characteristics of sans serif and serif letterforms into the same font, and even into individual letters. “Inspired by cyberpunk
fiction and ‘wirehead|hacker technologies’, Makela was one of the most cranked-up, excessive designers of the period; in his own words, ‘100% digital’” (Poynor, 2003, pp. 101-2). Typography, though morphing into a more flexible and elastic media, was still the same in that the style of the letters largely reflected the technologies being used to create them, as well as larger societal views regarding the state of art. Emigre was widely recognized as a post-modernist publication that embraced the chaotic, unpredictable, and uncertain nature of the time.


In 1991 TrueType, an outline font standard, was developed as a way to support scalable type technology at the operating-system level. “For the first time, through either TrueType or Adobe ATM, Macintosh and Windows users could now see on-screen what the font output would look like at any size” (Clair & Busic-Snyder, 2005, p. 137). Gone were the days of creating an entire set of lead letters if you wanted a larger or smaller font; with
TrueType came the ability to make letters larger or smaller and to see the design changes displayed instantaneously onscreen.

OpenType was a new font format that was also developed by Apple and Microsoft that was a unification of the PostScript and TrueType font formats and first appeared on the market in 2000. OpenType’s strengths come from its cross-platform compatibilities (e.g. the same font file works on both Macintosh and Windows computers) and its support of unlimited alternate characters in one font, such as letters with stylistic additions like swashes, or alternative versions of a typeface like old style figures or small caps. Since its debut in 2000, many font foundries have adapted to fully support OpenType fonts, and Adobe, one of the leading font foundries and publisher of the most-used graphic design software, the Adobe Creative Suite, has converted the entire Adobe Type library into OpenType fonts. The OpenType font format, much like the invention of the original Macintosh, led to another more recent explosion in typographic experimentation.

**Mutable Typography: Even More Variety/Elasticity**

The advent of the OpenType in 2000 brought many new possibilities for type designers. One aspect of the OpenType font format that has encouraged new advances in typeface design in the past 15 years is OpenType’s ability to support a large quantity of alternate glyphs, or different versions of the same character for purely stylistic purposes. The FontLab, Ltd. (2006) *FontLab Studio 5: OpenType User’s Manual for Macintosh* defines the difference between a glyph and a character:

> For the purpose of font technology, a glyph is a single element of the glyph collection stored within a digital font file while a character is a text encoding codepoint used in text processing. Glyphs are used to visualize characters. Each font has a different glyph for the same character, [sic] for example all the glyphs are used to visually represent the same character ‘A’ (Unicode codepoint 0041). (p. 128) [See Figure 8.]
With OpenType, the type designer is no longer limited to creating one individual glyph for each character in the Unicode system. The Unicode Standard, According to FontLab, Ltd. (2006):

…is a character coding system designed to support the interchange, processing, and display of the written texts of the diverse languages of the modern world...Modern operating systems such as Mac OS X or Windows 2000/XP use the Unicode Standard as the default way to store text. Similarly, modern font formats such as OpenType and TrueType use Unicode to store character information.

Unicode can use up to four bytes to encode a character, [sic] it is theoretically possible to encode 4,294,967,296 characters, although the Unicode Consortium agreed that no more than 1,114,109 codepoints will ever be assigned. In the current (as of September 2005) version 4.1 of the Unicode Standard, a total of 97,786 codepoints have been assigned (less than 9% of the possible space). (p. 127)

Although this method of standardization is an unprecedented and advanced way of making all of the writing systems of the world accessible, it did not reach its full potential until OpenType was invented. In the context of the TrueType format it meant that type designers were not able to create alternate glyphs for letters; there could only be one design per Unicode code point. Before the invention of OpenType, if designers wanted to create a font that had stylistic alternate glyphs, they would have to create completely separate font files. OpenType made creating stylistic variants of letters much easier, which resulted in many typographers experimenting with what the technology could do.

This ease of creating fonts with many stylistic alternate versions of characters thanks to OpenType has led to a recent phenomenon which graphic designer Rolando Cantara has dubbed “mutable typography.” Mutable typography, according to Cantara (2012), is:

…type that changes…With mutable type, typographers have more power to change how they set the type, how that typesetting is displayed in any given media, and what parts of it might vary over time…A typeface becomes mutable
when it gives the typesetter many different ways to typeset the same message while maintaining a cohesive aesthetic.

According to Cantara (2012), mutable typography is not that common yet, but with the advent of OpenType technology in the past decade, the ease of creating mutable typefaces has grown exponentially. Before the Opentype Format, or OTF, type designers that wanted to have any sort of non-standard glyphs or ligatures had to create “companion styles” for fonts to get around the limitations of the font-making software of that time. This meant that the typesetter or designer also had to do a lot more work, having to select letters they wanted alternate styles for by hand, and changing the font manually on a glyph-by-glyph basis.

Despite the lack of technological support before 2000, there were some precedents to the mutable typographic trend that began to represent and embrace the unlimited variations and random nature of the postmodern era and digital technologies. One of the first of these fonts was Beowulf. First designed in 1989 by LettError, a foundry created by Just van Rossum and Erik van Blokland, Beowulf was designed because the font designers recognized that digital fonts were composed of code, and wanted the font to include sets of instructions that allowed the letters to modify themselves randomly. To do this, they changed the programming in PostScript:

…each point in each letter in every word on the page would move randomly, giving the letters a shaken, distraught appearance…the face made typographers and graphic designers of good standing cry out, seeing it as final proof of the dangerous effects of computers on typography. Luckily this turned out to be a generational thing and soon FF Beowolf was being used for posters, headlines, CD covers, band logos, magazines, and everything else. (LettError, 2015)
In the 1990s, however, as the type tools advanced, Beowulf began to fade into oblivion as printer drivers and operating systems were built to ignore deviations in standard fonts. Yet OpenType brought new possibilities for the font, and LettError created a new version in 2007 with the new technology that no longer was completely random, but utilized a pseudo-random feature that shuffles through more than 90,000 glyphs to create the façade of randomness (LettError, 2015). This revitalization and newfound interest in Beowulf represents a need in the type community to recognize and somehow ideologically deal with the proliferation of fonts in the new millennia. The font’s complexity and sheer number of options that are presented to the user, in a seemingly random fashion, is a metaphorical representation for the vast network of letterforms available to designers now.

Another example of newfound elasticity in font design was Matthew Carter’s Walker typeface. Commissioned in 1995 by the Walker Art Center in Minneapolis, the goal was for Carter to develop a typeface for their updated brand that would “reflect its mission to attract culturally and ethnically diverse audiences through a new visual identity” (Clair & Busic-
Snyder, 2005, p. 132). Carter, a skilled typographer who is also known for Georgia and Verdana, two typefaces designed especially for optimization with web viewing, was known for his technical skill and knowledge of printing technologies. In response to their desire to attract diversity, Carter created the Walker typeface, which has a straightforward sans serif typeface as the base, but includes five different styles of “snap-on” serifs and three different styles of strokes to join letters together. The additional serifs and the joining strokes were designed as discretionary aesthetic extras, meaning that the graphic designer or typographer would have these additional styles as part of their toolbox when designing their documents. They could add or subtract stylistic elements to suit their design needs. This is in contrast to ligatures, which are also stylistic alternates, but are programmed to automatically replace combinations of letters, such as fi or ff. In this case, the designer does not necessarily have the option to choose the ligature; the ligature is substituted for them due to a decision made by the typeface designer, which is programmed into the font file. Though less complex than Beowulf, Walker was emblematic of the do-it-yourself approach that type designers were beginning to embrace with the arrival of desktop publishing technologies starting in the 1990s. Digital font technologies created users that were simultaneously interested in increased control, as well as embracing the chaos and proliferation of the times.
More recently mutable typefaces have been appearing on well-known font websites like myfonts.com. Lavanderia, designed in the 2010s by James T. Edmonson, has become very popular, and features one to two stylistic alternate glyphs for both upper and lowercase letters. Called discretionary alternates, these styles can be chosen by the designer on a case-by-case basis. Many of the lowercase stylistic alternates feature swashes that work well when placed at the ends of words or sentences.
Figure 11. Lavanderia: glyphs with stylistic alternates. Source: Lost Type. (n.d.). *Lavanderia* [Font]. Retrieved from http://www.losttype.com/font/?name=lavanderia
Table designed by author.
Dual by Charles Daoud Type, another recently designed mutable typeface, has 566 glyphs—up to 18 stylistic variants for each uppercase letter. Many of the stylistic alternates follow a system so that certain alternates from different letters work well together.


With OpenType technology the possibilities have become endless because thousands of stylistic alternate glyphs can now be supported, and the possibilities will continue to grow as more and more designers adopt this newer trend. The benefit of having stylistic alternates in one typeface is that all of the letters still work together as a system, so no matter what alternates the designer chooses, if the mutable typeface is well-designed, the final outcome of the piece will be one of visual unity and professionalism, as opposed to amateur designs that utilize too many fonts, resulting in visual chaos.
CHAPTER 2

BRAINSTORMING, EXPERIMENTATION,
AND PHILOSOPHY

WHY A TYPEFACE?

When I began graduate school in 2012, I started with a conditional acceptance because my typographical skills were lacking. I had not studied graphic design as an undergraduate student, and my career as a graphic designer had been in-house at the University of California, Davis. During my time as a designer there I was limited to using two fonts only: Futura and UC Berkeley. I did not have knowledge of the history of typography and did not have experience drawing upon the many fonts available to designers. Deciding early on that I wanted to turn my weakness into strength, I decided that it was my goal to design a typeface during my time in graduate school. This was a task I thought lightly of at first, not realizing the vast amount of work and research I would need to complete in order to reach my goal, especially because I had no experience designing typefaces prior to graduate school.

Another motivation for my desire to focus on typography was my interest in letterforms from an early age. I never planned to be a typographer, but as a child I taught myself calligraphy and was always drawn to illuminated manuscripts. I would often pen names on certificates, and was hired by people in my community to make name cards or other projects that required hand-drawn calligraphy. This was a hobby I largely forgot once I attended undergraduate school, but my interest in letters remained, even as a literature major. I was drawn to experimental texts that played with the forms of the letters on the page, like Mark Danielewski’s novel *House of Leaves* (2000), which experimented with the text format on the page, mirroring the content with typographic experimentation. Although the experimentation was not with the actual forms of the letters, it was very experimental in
terms of its layout, especially for its time in the novel genre. It was one of the first experiences I had with experimental layout and made a strong impression on me moving forward.

My goal during this period in my life was to write a novel, (and is a goal I still have), but as of yet have not accomplished. Perhaps creating a typeface, in another manner, was my way of trying to control the words I could not control in my previous attempts to be a successful writer of fiction. If I could not tame the words on the page, perhaps I could manipulate the letterforms themselves.
INITIAL EXPLORATIONS

Having no idea where to begin and what concepts to explore, I started with two separate brainstorming exercises. One involved freeform exercises on paper with a brush and ink where I gave myself parameters that I followed while moving the brush across the paper. I thought that some of these exercises would yield an interesting shape or form that I could then simulate in my typeface. For example, I would repeat a loop shape across the width of the paper, or draw vertical lines without re-placing my brush in ink to explore the different textures that differing ink levels could create.

Plate 1. Initial ink and paper explorations with specific parameters (2013)
(Photograph)

The other exercise I began was one that one of my faculty members had previously done with Wolfgang Weingart while in graduate school in Switzerland. I began with a white board, and began to sketch letters based off the Humanist sans serif classification. I decided to begin with a Humanist sans serif font because I was drawn to the inherent identity crisis in the font style. Sans serifs by their very classification are contemporary, and yet Humanist sans serif letterforms are based on classical proportions and often have two-story lower-case As and Gs like most serifs (Plate 2, p. 23). This contradiction housed within the style itself
was fascinating to me, and I decided I wanted to explore this contradiction further and in more detail. I based my initial letter choices off of those recommended in Karen Cheng’s (2005) *Designing Type*, which recommends lowercase *a, e, g, n* and *o* (p. 8). From there I painted them with black paint. Once the black paint was dry, I went back over the stems and terminals of the letters and refined them with white paint, then refined them again with black paint, etc. I continued this exercise until I ended up with letter shapes that were at least somewhat refined that I thought would be an interesting basis for a typeface.

**Plate 2. The progression of my letters as I continued the paint and board exercise. Notice the two-story style of the letters ‘a’ and ‘g’** (2013)

(Scan of acrylic paint on illustration board)
aegn
aegn
aegn
aegn
After multiple rounds of refining the letters I began to find I was drawn to pointed terminals (the finishing element to the stroke of a letter) and pointed spurs (the ear at the tip of an area created when two strokes flow into each other or change direction, as seen on the top of the g and n in Plate 2). The tapering points were interesting to me as they made me think of the pen nibs I had used as a child, and were also not something I had seen in a lot of font designs.

**Early Typeface Designs and Discovering Semiotics**

After both of my initial exercises I began another round of calligraphic ink and brush experiments. Around the same time I also began studying philosophical texts that formed the basis of semiotic theory, including Plato’s *Phaedrus*, Ferdinand de Saussure’s *Course in General Linguistics*, Derrida’s *Of Grammatology*, and Umberto Eco’s *Semiotics and the Philosophy of Language*. I wanted to learn about how the shapes of letters could affect meaning, and because semiotics is the study of signs and symbols and how they relate to meaning, I thought these philosophical texts might give me some more fundamental answers about how to manipulate the letterforms I was creating a in a meaningful way.

The first philosophical text I read was Plato’s *Phaedrus*, which focuses on a description of the fundamental essence of a thing. In the text, the two characters Plato and Phaedrus have a discussion about what is referred to as “the theory of the forms.” In this allegory, Plato explains heaven as a place with many levels that souls inhabit, and as their wings grow, they are able to see more and more of the highest level of heaven. At the highest level the souls see something that is hard to explain, but is like a glimpse of reality… “The place beyond heaven…is without color and without shape and without solidity, a being that
really is what it is, the subject of all true knowledge, visible only to intelligence, the soul’s steersman” (Plato, 1995, p. 33). During the same time I was reading Phaedrus I also attended a Robert Irwin (2013) lecture where he discussed the idea of phenomenological reduction. In order to explain this concept, he referenced three of Mondrian’s paintings: Red Tree, The Gray Tree, and The Flowering Apple Tree. He discussed how he was fascinated by these paintings early on his career; how Mondrian had begun with objects depicted in a pictorially realistic manner, and as he continued to paint them in new iterations, tried to break them down into smaller and more abstract pieces until they represented the pure energy of the thing.
Having felt like my earlier experimentations had not brought me to any interesting conclusions, I returned to them again, considering the idea of pure energy. Never having studied art history before, I was fascinated by the concept, and asked myself, if painters can do this with paint, why can’t we do it with letterforms? Does it matter if they are illegible?

So I began again, working with a wide paintbrush and ink, and giving myself parameters as I moved through the exercises. The second round yielded more promising results, so I continued with them and did a total of about 24 studies.
Plate 3. *My second round of calligraphic exercises, each 22” x 28”* (2013) (Photographs of India ink on sketch paper)

As I was moving through the different studies, I also began to think more about *Phaedrus* and the theory of the forms, as well as the Robert Irwin lecture and the idea of reducing something down to its fundamental energy. These ideas also made me think of a typography class I was teaching that semester, during which I had discussed the fundamental units of letterforms with my students: “The capital, or uppercase, letters are the oldest forms in the alphabet, and the most simply drawn…[They] are made up of a variety of linear forms: straight vertical and horizontal lines, diagonal lines, and circular lines whose inherent qualities are simplicity and differentiation” (Samara, 2006, p. 15). I began to work with these elements, envisioning them as energy instead of the foundational pieces of letters.
Plate 4. *Calligraphic exercises that drew upon the elemental units of letterforms, each 22” x 28”* (2013)  
(Photographs of India ink on sketch paper)

After finishing Plato’s *Phaedrus*, I moved on to Ferdinand de Saussure’s *Course in General Linguistics* (1916/1983). Though largely considered out of date and incorrect now, his theories about written and spoken language were useful to me in my experimentation. A foundational text for semiotics as a field of study, de Saussure posited the idea that every sign (or everything that we understand, be it a spoken word, a written word, etc.) is a dual entity that is both signal (sign) and signification (meaning) united into one, and that the linguistic sign is arbitrary and can only be identified with coexisting signs as part of a structured system. While I was reading the text, one passage was of particular interest to me in the context of letterforms: “A language is in no way limited in its choice of means. For there is nothing at all to prevent the association of any idea whatsoever with any sequence of sounds whatsoever” (de Saussure, 1916/1983, p. 76). Inspired by the notion that the assignation of any sign to any sound or symbol was arbitrary, and in the spirit of experimentation and letting go of expectations of what I thought a typeface should be, I decided to use the second round of calligraphic exercises I created and turn them into a typeface. I did not assign the symbols to letters in a completely arbitrary manner as some of the figures from my exercises already resembled letters, although some were assigned entirely at random. I thought it might be interesting to have an alphabet that was still vaguely legible on some level. Using a basic online handwriting type conversion tool, I took scans of the exercises and rendered them into a usable TrueType digital font.
Plate 5. *My calligraphic figures assigned to letters of the alphabet* (2013) (Digital)

After creating what I dubbed my “calligraphic alphabet” I tried multiple projects that utilized the font in different ways that explored the nature of how the reader creates meaning and interacts with the text. One of my first projects with the font was *The Book Repeats*, a woodcut book that drew from Derrida’s *Of Grammatology*, and was read in an infinite loop that the reader could enter or exit at any point. This book was representative of the deconstructionist viewpoint of Derrida’s text, which I read after de Saussure’s book. *Of Grammatology* argues that text itself is fluid, ethereal, and dependent upon the viewer’s interpretation, which is what my work, *The Book Repeats*, conveys.
Of Grammatology argues that no text is read the same way twice, and a person will interpret the same text differently when read at different times. In this way, what the writer is conveying becomes irrelevant, and the reader’s interpretation is all that matters. This concept is the foundation of deconstructionist thought; that there is no meaning separate from the tools used to create meaning. There is no ultimate truth, no form or being that can be seen separately from the thing that represents it; in other words there are no true Forms like those in Plato’s Phaedrus.

Humankind’s common desire is for a stable center, and for the assurance of mastery—through knowing or possessing. And a book, with its ponderable shape and its beginning, middle and end, stands to satisfy that desire. But what sovereign subject is the origin of the book? “I was not one man only,” says Proust’s narrator, “but the steady advance hour after hour of an army in close formation, in which there appeared, according to the moment, impassioned men, indifferent mean, jealous men…In a composite mass… these elements may, one by one, without our noticing it, be replaced by others, which others again
eliminate or reinforce, until in the end a change has been brought about which it would be impossible to conceive if we were a single person.” (Spivak, 1997, p. xi)

The final result is something that is not clear; the goal being that viewers have to work with the text, and that they will see it as something recognizable as text or some sort of message. Yet it is a message they cannot discern, and upon closer inspection the reader will become more involved in the more they look.

When one thinks of words written on a page, or text in a book, the thought is that these words are concrete. Yet Derrida argues that words on the page are in fact less concrete than those that we speak to each other. The very foundation upon which we communicate—the system of the printed (or digital) word—is a shaky system subject to infinite interpretations. And not only is it shaky, but also aids in shaping the infinite realities that we know:

…it is necessary to surround the critical concepts with a careful and thorough discourse—to mark the conditions, the medium, and the limits of their effectiveness and to designate rigorously their intimate relationship to the machine whose deconstruction they permit; and in the same process, designate the crevice through which the yet unnamable glimmer beyond the closure can be glimpsed. The concept of the sign is here exemplary. We have just marked its metaphysical appurtenance. We know, however, that the thematics of the sign have been for about a century the agonized labor of a tradition that professed to withdraw meaning, truth, presence, being, etc. from the movement of signification. Treating as suspect, as I just have, the difference between signified and signifier, or the idea of the sign in general, I just state explicitly that it is not a question of doing so in terms of the instance of the present truth, anterior, exterior or superior to the sign, or in terms of the place of the effaced difference. Quite the contrary. We are disturbed by that which, in the concept of the sign—which has never existed or functioned outside the history of (the) philosophy (of presence)—remains systematically and genealogically determined by that history. It is there that the concept and above all the work of deconstruction, its “style,” remain by nature exposed to misunderstanding and nonrecognition. (Derrida, 1976/1997, p. 14)

The very framework upon which we function was built upon beams that were unreliable, and it was this framework of misunderstanding that I wanted to exploit in my work. I wondered if the forms of the letters themselves could also be inconstant, just as Derrida argues text is. If letters on a page are ethereal and mysterious when taken together to form words and passages, what if we look even more closely, at each letterform and its pieces, and how it is
constructed? Would this further deconstruction of not just the printed word, but the printed letter itself be useful?

Additionally, deconstruction is an excellent lens through which to examine the field of graphic design. According to Lupton and Miller (1999), it is not an historical style or period, but instead “a critical process—an act of questioning” the very framework within which we exist (p. 13). It is this viewpoint from which I find deconstruction to be most useful. Lupton and Miller (1999) argue that typography has taken writing even further away from speech—and thus the signified—through its “punctuation, flourishes, deletions, and patterns of difference such as roman/italic and uppercase/lowercase” (p. 13). In this way, from a deconstructivist standpoint, typography is as important in the attempts to understand communication as any other means of signification, and is as subject to the whims of any other form of signification as well:

The history of typography and writing could be written as the development of formal structures that have explored the border between the inside and the outside of texts…the field that Derrida called *grammatology*, the study of writing as a distinctive mode of representation…Some conventions have served to rationalize the delivery of information by erecting transparent “crystal goblets” around a seemingly independent, neutral body of “content.” Some structures invade the sacred interior do deeply as to turn the text inside out, while others ignore or contradict the internal organization of a text in response to external pressures imposed by technology, aesthetics, corporate interests, social propriety, production conveniences, and so on. (Lupton & Miller, 1999, p. 15)

Thus, we are dealing with many different forms, or “structures” that aid in understanding and communicating. But each of these structures is vulnerable to its own form and the structures surrounding it, resulting in contradictions, confusion, misrepresentation, and thus, chaos. Could reducing down to the very tiniest elements of a letter—the foundation of communication, help us to navigate through?

**DISCOVERING THE MODEL Q**

How to make sense of all of the possibilities inherent in *grammatology*? If any structure could be read any way, and the very forms of typography on the pages themselves affect meaning, then what is the point of even trying to understand? Umberto Eco’s concept of the Model Q which he discusses in *A Theory of Semiotics* (1976) and *Semiotics and the
Philosophy of Language (1984) put some of the concepts I was grappling with it into a useful framework, allowing me to visualize them.

In A Theory of Semiotics, Eco (1976) explains what he calls Quillian’s Model or Model Q:

Quillian’s model…is based on a mass of nodes interconnected by various types of associative links. For the meaning of every lexeme there has to exist, in the memory, a node which has as its “patriarch” the term to be defined, here called a type. The definition of type A foresees the employment, as its interpretants, of a series of other sign-vehicles which are included as tokens (and which in the model are other lexemes). The configuration of the meaning of the lexeme is given by the multiplicity of its links with various tokens, each of which, however, becomes in turn a type B, that is, the patriarch of a new configuration which includes as tokens many other lexemes, some of which were also tokens of type A, and which can include as token the same type A…As can be seen, this model anticipates the definition of every sign, thanks to the interconnection with the universe of all other signs that function as interpretants, each of these ready to become the sign interpreted by all the others; the model, in all its complexity, is based on a process of unlimited semiosis. From a sign which is taken as a type, it is possible to penetrate, from the center to the farthest periphery, the whole universe of cultural units, each of which can in turn become the center and create infinite peripheries. (p. 123)

At this point, Eco includes a table, trying to show the word “plant” as the central type, and all of its interconnected “tokens” in an attempt to demonstrate how to define a signifier. But he then goes on to say that “actually no graph is in a position to represent it in all its complexity” (Eco, 1976, p. 124).

Feeling even further confusion, I grasped about in my reading, looking for something concrete (an impossibility when discussing semiotics), when I landed upon Eco’s Semiotics and the Philosophy of Language (1984) in which he further discusses the Model Q, visualizing the attempts to create meaning with concrete metaphors. He starts with the explanation of the labyrinth as a fitting symbol for the semiotic conundrum: yet the classical labyrinth is too linear (reach the center, get past the minotaur and get out the other side); and the maze is too privileged or hierarchical (he argues earlier that there is no true hierarchy when looking at the encyclopedic existence of words). He then lands upon the concept of the Model Q as being some kind of combination of a boundless net and a rhizomatic structure:

The main feature of a net is that every point can be connected with every other point, and, where the connections are not yet designed, they are, however, conceivable and designable. A net is an unlimited territory…the abstract model of
a net has neither a center nor an outside… a labyrinth of this kind is a *myopic algorythm* [sic]; at every node of it no one can have the global vision of all its possibilities but only the local vision of the closest ones: every local description of the net is a *hypothesis*, subject to falsification, about its further course; in a rhizome blindness is the only way of seeing (locally), and thinking means to *grobe one’s way*. This is the type of labyrinth we are interested in. (Eco, 1984, p. 82)

There is no outside structure from which to observe. Yet the frameworks we use to observe are imperfect and contradictory. There is no ultimate truth from which meaning stems, and everything is interdependent upon each other for significance. I finally had my metaphor, and aware of the inherent contradictions in what I was attempting to do, I decided then to attempt, using letterforms as my *types* or nodes, to demonstrate the complexity of semiosis, using deconstruction as my devil’s advocate, and Umberto Eco’s labyrinth as my guide.

**THE INTERPRETANT AND REFLEXIVE DESIGN**

For my next project with the calligraphic typeface, I wanted to explore the idea of the reader working to understand the text; that third element, the interpreter. In Thomas Ockerse’s (1997) article “The Semiosis of Design” he describes the role of the *interpretant*, the third and most important element to the creation of meaning—the reader or viewer’s own take on the material. This is a concept that de Saussure neglects in his 1916 work in that he focuses only on the sign and signifier, when the derivation of meaning is really a triadic action that develops as a result of an ever-morphing dance between the sign (*representamen*), the signifier (*object*), and the viewer (*interpretant*):

Most of us prefer to freeze a “sign” into a finite entity. Yet “one” in isolation is “monadic”, merely a potentiality, something sensed. Since being is to be related, even the mere sense of some “thing” means to bring to that one a second, thus forming a “dyadic” relationships (so characteristic of Saussurian semiology. Yet, the interpreter of this dyad merely characterizes a “*fact*” or thingness…While the value of that “*fact*” is in its idea of limitation as separate from that which it is not, it has no particular significance unless it is regarded further. This suggests a third, but to merely add a third relation is merely to create another dyad. Peirce views this relationship of a third in the character of *reasoned intentionality and conduct* that thereby governs the nature of the two it mediates as existent particulars via a perceptual judgment! This he calls the *genuine triad*: ‘*The corresponding idea characteristic of three is ‘third’ (or) uniter.*” This process underlies the foundation of Peirce’s work with sign: the monad reflects his principle of *firstness* which we find in the sign as its “Representamen”; the dyad reflects his principle of *secondness* or that which is the “Object” of that sign; and the triad, which in its
genuine relationship reflects this principle of *thirdness*, we find the sign’s “Interpretant”, the factor that causes the first and second to result in the notion of significance. This notion of a third, or the Interpretant factor, is the keynote of “generality”—the world of knowledge and chain of corollaries that govern the very notion of significance. This principle of generality reflects context, or conditions for, a frame of reference. However, generality also points to relativity and incompleteness regarding a continuum of possible relations (the continuum of ideas, as an ever evolving multiplicity of possible pathways to and from ideas/signs)...Each component of the triad characterizes a relative state of “reality” or existence, each realized from a relative state of consciousness. The relationships of these components is not only triadic but concentric since they are interdependent. (Ockerse, 1997, pp. 148–149)

In addition, Ockerse talks about the inter-relatedness of everything. Nothing exists in isolation, and “reality” is relative. I knew I wanted to further explore this concept of ever-shifting and morphing reality, and I felt that a lens of confusion and mutability best represented this idea.

Perhaps the most unnerving, and thereby most interesting element of this theory of semiotics is the notion that the role of the interpretant is ever-changing, traveling along the “continuum of ideas.” This concept, explored at length by Umberto Eco in *Semiotics and the Philosophy of Language* was a starting-off point for me, a concept I saw that fit in with the notion of mutable typography. The ever-pragmatic graphic designer of 2015 does not usually come from a place of choice and changeability, nor do they use the approach of looking at graphic design from a tentative standpoint. Contemporary design in the 2010s has veered toward the “less is more” aesthetic, and the notion of mess and chaos has not been revisited at length in the field of graphic design since the deconstructivist experiments of the Cranbrook Academy’s design program in the 1970s–90s. According to McCoy & Frej (2009), faculty members at Cranbrook:

> The notion of ‘authorship’ as a personal, formal vocabulary is less important than the dialogue between the graphic object and its audience; no longer are there one-way statements from designers…objective communication is enhanced by deferred meanings, hidden stories and alternative interpretations. (p. 83)

I wanted to experiment with this element of changeability in my work, and to use my calligraphic alphabet as a starting point. Furthermore, I wanted my next work to follow in the steps of the designers from Cranbrook, and the designer Jan Van Toorn, known for his reflexive design.
Reflexive design is tied into Ockerse’s theories, and is discussed by Robert Stam (1992) in his book *Reflexivity in Film and Literature: From Don Quixote to Jean-Luc Godard*. It is a concept that “subverts the assumption that art can be a transparent medium of communication, a window on the world, a mirror promenading down a highway” (p. xi). Jan Van Toorn, a Dutch designer in the 1970s and 80s, is “considered a reflexive designer due to his use of strategies like narrative discontinuities, authorial intrusions, essayistic digressions and stylistic virtuosities” (Poynor, 2008, p. 96). Van Toorn functioned in the semiotic space that challenges the interpreter of a work to enter into a dialogue to understand a design; in other words, grasping the concept of a work is not a passive activity.


Fig. 15

Jan Van Toorn’s *Mens en Omgeving* (*Man and Environment*) poster series is emblematic of the idea of reflexive design. According to graphic design scholar Poynor (2008):
…the series can be seen as a sustained exercise in reflexive design…by using Warholian repetition, Van Toorn draws attention to the designer’s role as the shaper of public communications and to print as a medium based on the multiple reproduction of an image. He also reminds viewers of the media’s power to create and sustain a global star such as Loren, though it is less clear, even in retrospect, whether his “restructuring of the code” of the contemporary art museum poster is meant to map onto the meaning of the individual exhibitions, to offer a parallel commentary, or just to provide an element of alienating “redundancy. (p. 113)

In other words, he wanted “the reader to be aware of the designer’s intervention” (Poynor, 2008, p. 112), and the complexity of the design, with its lack of a clear message, did just that. The poster directly opposes the International Typographic style with its diagonal imagery and lack of organized grid. Typography is strewn about with haphazard rules and boundaries. His multilayered techniques challenge the reader to enter into a dialogue with the text. Unlike the International Typographic Style the message is not immediately apparent. In this sense he is what McCoy describes: a designer that confronts the audience.

I started with an exercise described by Thomas Ockerse (1984) in his article “De-Sign/Super-Sign”: a “generative process that purposely adds meaningful visual signs to a text in order to optimize our reading intentions” (p. 255). In this exercise, Ockerse recommends adding visual space, symbols (punctuation), and type changes (capitalization, size changes, etc.) to a design, and to emphasize hierarchy in order to demonstrate how these factors facilitate “the reader’s ability to identify and formulate purposeful relations and to define representations” (p. 261). He calls this exercise “generative.” I conducted my own generative experiments in which I started with plain text all of the same size, with no punctuation, size difference or spatial variation. I then gave myself parameters (much as a I had when working with my calligraphic ink exercises) and worked my way forward, observing the change in significance as each design element was added.
Plate 7. Generative exercise in which I progressed with one additional design element with each iteration (2013) (Digital)

What I found after working on this exercise was that it was impossible to be pragmatic about the design decisions I was making; there was no way to follow any sort of standardized process. Each design I made, though somewhat logical at the beginning (add space variation, punctuation, capitalization, size changes, etc.), became more and more difficult to
systematize with each iteration, at which point I gave up completely and began to work from
instinct. You can see this moment of breaking down at iteration number nine and ten (Plate 7, p. 39),
where I grew tired of the direction the design had been taking, and removed all of the
previous design changes, changed all of the font to the same size, and moved it to the top of
the page with negative leading. Perhaps I wanted to create more white space. Perhaps I felt it
looked too haphazard and wanted to correct this issue. I do not remember my exact reasoning
at the moment, but the point is that no matter how systematic or logical graphic designers
may act in contemporary design circles, the fact is that graphic design is still an artistic and
subjective field at its very core, and each design project, though often approached from an
almost quasi-scientific stance in the educational system, is truly a field that is subject to the
whimsies of those that practice it, and is far more chaotic that it might appear. The element of
randomness and chaos is further magnified in my exercise with iteration number twelve
when I began adding images to the background. In this case I decided I wanted to incorporate
more hand-written elements, and to insert myself into the equation, so I added a color scan of
my notebook which included my thoughts and observations made while reading Umberto
Eco’s *Semiotics and the Philosophy of Language*. I incorporated this technique in later
projects, and realized that it continued my element of wanting to maintain control in some
way. I was, literally, inserting the interpretant (myself) into the design equation. Was self-
aware graphic design even possible? Was it a step beyond reflexive design? Where not only
the design, but also the designer confronts the viewer?

**POSTMODERN DESIGN PIONEERS**

Postmodernism in graphic design, and specifically the deconstructionist ‘style’ was of
great inspiration to me during my time of experimentation, and no designers more than April
Greiman and David Carson epitomized this aesthetic.

April Greiman was at the forefront of the digital revolution of the 1980s, and was one
of the first graphic designers to push the new Mac technologies to new places. Instead of
shying away from these new technologies, Greiman embraced them, allowing her work to be
dictated by the new reality that graphic designers faced at that time. She is best known for her
1987 magazine design of *Design Quarterly* for the Walker Art Center in Minneapolis. She
“created a single-sheet magazine with a … digital collage executed entirely on the Macintosh
computer. She explored capturing images from video and digitizing them, layering images in space, and integrating words and pictures into a single computer file” (Meggs & Purvis, 2012, p. 533).

Carson, who was known for his role as art director at Ray Gun magazine from 1992–1995, followed in the footsteps of punk music and made rule-breaking his calling card. His work utilized distorted letterforms, a complete lack of grid system, and even setting columns of type in illegible dingbats (Poynor, 2008, p. 63). “Echoing designers from Cranbrook and CalArts, Carson argues that the rationalism of grid systems and other kinds of typographic formatting is ‘horribly irrational’ as a response to the complexity of the contemporary world” (Poynor, 2003, p. 61).
My fascination with these two designers lay in their ability to layer complexity, break rules and yet still convey a message; a visual message that better communicates the content than the actual text. They create their own content through rule-breaking and mess, and the reflexivity in the design requires the viewer to work to find their own meaning. The goal for my typeface and my final exhibition would be to emulate this chaos, layering, and complexity. The role of postmodernism in graphic design is one that requires both viewers and designers alike to always approach communication from a place of curiosity. It was this sense of curiosity that I wanted to explore and foster in my work.

**REFLEXIVE TRUTHS POSTER SERIES**

Motivated by the generative exercises as well as the work of Greiman and Carson, I wanted to include the complexity of layering in my next project, and decided to learn how to screenprint. Screenprinting, which is a manual process and which can only be done one color...
and one screen at a time, was a perfect medium for layering imagery: each layer is deliberate and physical. The ink is slightly higher than the level of the paper, creating a tactile quality lost in digital prints, and with each layer that is built up, the more three-dimensional and reflexive the print becomes. Entitled *Reflexive Truths* after Jan Van Toorn’s methods, I planned a series of 26 posters (one for each letter of the alphabet) and set a passage from Derrida’s *Of Grammatology* in my illegible calligraphic typeface. Each poster holds the passage printed on it in the same location, however, through the course of the 26 posters as the viewer moves through them, the legibility slowly returns by recovering each letter of the alphabet on each print: on the first poster all of the a’s are revealed in a legible typeface (Courier), on the second all the b’s, and so forth. The first layer of each poster includes a print from my notebook scans, and the middle layer is a large print of the letter, in my calligraphic typeface, that is revealed in the smaller passage.

In the poster series I am layering meaning by including personal notes and the generative gestural drawings of the illegible typeface. Through this layering, I am emulating the complex nature of signification: the act of reading and interpreting a text, and the way that it changes every time the viewer returns to it, discovering new information or focusing on areas of the text they may have disregarded during the first reading. The final result is a work that is initially illegible, but becomes recognizable as the viewers work with the text. Upon closer inspection, the viewer discovers that they must search for the meaning, and will find the pattern, becoming more involved by predicting and completing it themselves. Although I have only printed 8 of the 26 posters, I have created digital mockups of all of them.
Plate 8. Notes I made while reading the different philosophical texts, which I then used in my poster series (2013)  
(Scanned images)

(Acrylic paint and screenprints on Rives Heavyweight, and digital mockups)
Although the poster series had some interesting implications in terms of its serial nature and how information was revealed slowly through the work of the viewer, I was drawn more and more at the time to digital technologies and projects that required not just a dialog between the work and the viewer, but actual interaction on the part of the viewer to further develop
this idea of reflexive design. Because this was a static project simply hung on a wall, I abandoned it and moved forward with the legible typeface I had started sketching some time earlier, thinking that if I digitized it, I could create more interactive pieces with it in a virtual space.
CHAPTER 3

THE PROCESS OF DESIGNING
A DIGITAL TYPEFACE

INITIAL DIGITIZATION AND CHALLENGES

For my next project I decided to return to my legible typeface sketches because I felt that I had, for the time being, exhausted work that I could do with my calligraphic font. Because the font is illegible, its uses were better suited for abstract design projects that align more with the fine art world and less with communication. Additionally, I wanted to learn the process of creating a legible, viable typeface that could be licensed as a complete set to be used by other graphic designers.

I began by scanning all of the board sketches I had done previously, placing the scans into Adobe Illustrator, and creating a grid in the software that included the baseline, midline, and capline to make sure that even my initial versions of the letters would be standardized. Using Frutiger, a Humanist sans serif as the guide for letter proportions, I created a base layer with each letter—both uppercase and lower case. I then digitally traced the scanned sketches on a new layer, and adjusted their proportions to be similar to Frutiger, which was my model for basic letter format.
Plate 10. Frutiger (blue solid letters) was the basis of my font. The outlined letters were my designs. My font shares an x-height with Frutiger, but has a higher cap height (2015) (Digital)

As I was unfamiliar with the process of designing a font my initial digital sketches were clumsy and went through many imprecise versions. I also tried drawing larger versions of each letter on graph paper by hand, but found that laborious and unhelpful, so I returned to Illustrator.
Plate 11. *Initial versions of my typeface traced in Adobe Illustrator (2013)* (Digital)

After I had the first set of letters drawn in the Illustrator, I continued to refine them digitally, working to make sure the width of the letter elements were consistent. I also began to do more digital sketching, starting to create multiple versions of the letters. I found that testing for the consistency of the letters was more efficient in a digital environment, so stopped sketching by hand completely and continued to work on refining Bezier curves and using the
digital versions of the letters as one would tracing paper, moving them around on the artboard, overlaying them with each other to test consistency of stem widths, and copying and pasting pieces of letters to use with others that had the same terminal or counter shapes, for example. I worked in a haphazard fashion, focusing more on the brainstorming aspect of the work and less on perfecting the forms. Once I had my initial versions relatively set I planned on continuing to edit them later.

Plate 12. Version 2 of my then unnamed typeface (2013) (Digital)
After I felt that I had exhausted my refinements in Adobe Illustrator, my next step was to continue to refine the letters in FontLab Studio 5. I also wanted to be able to export usable font files so that I would be able to set passages of text in my font, which I was not able to do at this point as every letter was still a vector object. Before I transferred the letters into FontLab Studio, if I wanted to set a passage of text, I had to move each letter by hand into alignment to form words and sentences. This was a very arduous and inefficient process.

FontLab Studio 5 is expressly for creating font file formats. According to FontLab (2015) on its FontLab Studio 5 webpage, the software is a:

…next-generation professional font editor for Mac and Windows. Used by Adobe, Apple, Bitstream, IBM, Linotype, Microsoft, Monotype, Morisawa and almost every other major font foundry in the world, it is the comprehensive solution for font foundries, professional type designers, typographers and graphic design studios, allowing them to design typefaces and create or modify fonts. FontLab Studio 5 supports all major outline font formats, including Type 1, TrueType, Multiple Master and OpenType.

FontLab Studio 5 has an import feature that is compatible with Adobe Illustrator, so after reformatting my letterforms to the proper point size, I imported them into FontLab Studio 5 and continued editing the letterform shapes, taking advantage of the far more precise control over points, or nodes. Unlike Adobe Illustrator, in FontLab Studio 5, each node is paired with a set of coordinates as well as “Bezier Control Points” or BCPs that control the size and shape of curved areas.
FontLab Studio 5 works on a glyph-based system, so you work by creating glyphs individually in the Glyphs Panel. The user can view a table of completed glyphs as well as incomplete glyphs, and then edits them individually. The designer can export the font at any time in a variety of different font modes, including OpenType, which was the format I worked in throughout the process. While refining the letters, I saved a new version with each major edit.

**VERSIONS AND MUTABILITY**

While continuing to edit my font in the FontLab Studio 5 software, I began to think of my research about mutable typefaces, and decided that a mutable typeface would be an excellent visual metaphor for Umberto Eco’s *Model Q* concept. By creating five alternate versions for each letter that grew more and more abstract, I would be demonstrating the concept that all meaning relies upon context. Once each letterform reached alternate version
number five, the letterform would not be legible on its own, and would only be legible when viewed in the context of other letterforms. In this way, the typeface, which I named Model Q after the theory, would be representative of the way the interpretant derives meaning, and like a typeface itself, demonstrates how significance is derived from a complex system in which every bit of information relies upon every other bit of information. Context is not only important to the creation of signification; it is signification.

I started the typeface with the initial characters I had drawn in Illustrator: one main version of each letter in both uppercase and lowercase (a total of 52 letters), including numbers. I also included a few variations of each letter that I had begun to design while working previously. In Plates 14–18 and 20–22, I show, through the course of eight versions, how I started with the initial glyphs for each letter, leaving blank spaces in the glyphs table for punctuation, special characters, and the five stylistic alternates for each letter in both uppercase and lowercase. Version 8, the current final version of my font for the purposes of this project, would include a total of 350 glyphs. In the plates below that detail the process, blue highlighted letters represent new glyphs for that version, and red highlighted letters represent that stylistic changes were made to those specific existing glyphs from version to version.
Plate 14. Version 1 of Model Q in the OpenType file format after transferring from Illustrator (2013) (Digital)
I started off with 109 glyphs total; I had already begun to experiment with alternate versions of the lowercase letters.
Plate 15. Version 2 of Model Q, red highlighted letters indicate a change in letter shape or form, blue highlighted letters indicate addition of a new glyph (2013) (Digital)
Plate 17. Version 4 of Model Q (2014)
(Digital)
Plate 18. *Version 5 of Model Q (2014)*

(Digital)

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Version 5 underwent a major structural change from the previous models, something I did to simplify the letterforms, especially for viewing at smaller sizes. My initial versions one through four had terminals that ended in a rounded, tapered point. However, I found that these small details were lost when the font was viewed at a smaller point size, so I decided to remove the curve. I retained the tapered point, but the elimination of the rounding gave a sturdier and more organized overall look and feel to the font.

Plate 19. The removal of the curved tapered terminals as shown in version one and version eight. Notice the optical loss of detail when comparing the large font (pt. size 170) to the small font (pt. size 12) (2015) (Digital)
Plate 22. Version 8 of Model Q (2014) (Digital)
It is worth noting that the red highlighted letters indicate major changes. I found that as I worked through the versions of the typeface, I consistently made tiny adjustments to letters here and there to improve Bezier curves or small inconsistencies. The final version (number 8) (Plate 22) is still not a complete typeface. It was meant for display purposes only for the use in my thesis exhibition and is missing a number of special characters needed in order for it to be complete and published. In addition to this, it needs the font metrics to be adjusted, which includes vertical and horizontal spacing and kerning, which must be done in addition to the design of the letterforms. According to FontLab, Ltd. (2006) *vertical font metrics* determines spaces between lines of letters, *horizontal font metrics* determines “metric values of individual glyphs that are used to compute line lengths,” and *kerning* is pair-specific horizontal spacing which needs to be done manually for certain classes of letters that need negative sidebearing in order to have the optimum optical spacing (pp. 538–539). Font metrics is a project in and of itself, and Model Q needs additional metric adjustment before the typeface is polished enough for public use.

![Figure 18](image-url)

**Figure 18.** An example of how certain letter pairs need additional adjustment for negative sidebearing if the shape of the letter, such as the lowercase *f*, would optically appear too far away horizontally from the letter next to it. Source: FontLab, Ltd. (2006). *FontLab Studio 5: Next generation professional font editor—PostScript, TrueType, Unicode, OpenType user’s manual for Macintosh* [Software manual]. Port Angeles, WA: FontLab, Ltd., p. 539.
Another aspect of type design I did not even touch upon while designing Model Q is the issue of hinting. Necessary especially for web-based fonts and any fonts that will be viewed onscreen, “Hints are used by the font rasterizer to improve a glyph’s appearance on devices with low output resolution, like computer monitors or low-res printers” (FontLab, Ltd., 2006, p. 486). This is another element of the font metrics that needs to be programmed and adjusted, and due to time limitations I was not able to begin hinting my font during my graduate school career. I do plan on adjusting all font metrics and hinting, as well as creating all necessary special characters in order to publish the typeface at a later date.

**Design Systems for Stylistic Variations 1-5**

During the course of creating alternate versions of stylistic glyphs for my typeface Model Q, I began to develop a visual system for each stylistic alternate, or SALT, which is the acronym used by FontLab Studio 5 when creating character encoding tables and classes for the font. Encoding tables and classes enable to designer to instruct the computer software with how to handle these stylistic alternate glyphs, which have no Unicode codepoint. Standard alphabets with no stylistic alternates have codepoints programmed into FontLab Studio 5 by default, but the creation of any specialized characters requires additional coding.

Based on my readings in semiotics, and specifically inspired by Umberto Eco’s theory of the Model Q, I wanted to incorporate a sense of abstraction as the reader moves through each variation of the font, and upon reaching a sentence completely typeset in SALT5 (the last stylistic variation), all of the letters would ideally be reliant upon each other in order to be legible for the reader. The system was developed while I created the font, and was not something I had established at the beginning; instead it grew organically and needed a great deal of edits before it reached its final iteration.

I began by creating stylistic variants based on interesting white space I would notice when typesetting letters together in various formations.
I noticed that by eliminating pieces of the letters, I would create white space that would flow from one letter to the next, as in the example of stylistic alternate 2 (SALT2) for the letter \(a\) that flows into the white space of stylistic alternate 1 (SALT1) of the letter \(s\) when the letters are typeset into the word “ash” (Plate 23). I decided to continue with this, as well as with flipping areas where pieces of the letter would not meet. For example, with the original glyph for the letter \(a\), the terminal at the bottom of the letter does not meet the stem (Plate 24). This is not commonly seen, as shown in the example below with the sans serif fonts Frutiger and Futura. In both cases for these fonts the lowercase \(a\) attaches to the stem in a transition. In the example of Model Q, this transition turns into a terminal (finishing element to a stroke) that creates a break. With SALT1 for the letter \(a\), this break occurs at the top of the letter, or the midline. For SALT2 for the letter \(a\) I removed the stem entirely, creating a large open space in the letter, and for SALT3 for the letter \(a\) I cut the letter in half diagonally. This method of subtraction worked well with my concept to move the letterforms closer to abstraction with each stylistic variant, and I continued this method with other letterforms, beginning with the lowercase.
As I continued to design the letterforms, the system grew into place, which started as follows while I was working on the lowercase set:

- Original glyph: break at bottom of letter
- SALT1: Break at top of letter
- SALT2: Large open space at bottom of letter
- SALT3: Remove bottom half of letter
- SALT4: Remove top half of letter
- SALT5: Cut letter diagonally and remove one piece according to which side would be better representative of the letterform.

However, as I continued with the system I realized that it would not work for all letterforms. For example, in the case of the lowercase letter p, if I removed the bottom half of the letter
for SALT3 per my parameters, then the letter would be hard to distinguish from the SALT1 version of \( n \). In the same manner, a \( q \) with the bottom half removed would be identical to SALT1 of the letter \( a \). Because of this issue I was also lacking a variation for the full five versions I wanted to make for each letter, so it changed the subsequent variations as well. I ended up resolving this issue by using diagonal cuts flipped horizontally, then removing one side and then other for the final two variations (Plate 25). The original system was also problematic for other letters such as \( b, d, g, p, m, n, q, u, v \), and \( y \) as well as for thin vertical letters with no bowls, like \( f, i, j, l \) and \( t \). I quickly realized I would need to make exceptions to the system in many cases, which I did, although I did try to adhere to the general rules whenever possible. In addition to this, I found that the exceptions made for a more interesting and varied font when it was typeset. For example, when typesetting a sentence entirely in SALT3, it was more interesting to have a few letter pieces that dropped into the white space, as shown in Plate 26.
Plate 25. Problems with the original alternate glyphs design system (2015) (Digital)
Plate 26. Variation as a result of exceptions made to the design system for stylistic alternate version 3 (SALT3) of the glyphs in version 9 of Model Q (2015) (Digital)

The quick brown fox jumps over the lazy dog.

Another way of dealing with alternate stylistic versions of letters being indistinguishable from others due to my parameters was to flip letters horizontally or change the shape of terminals to complement certain stylistic variants of the glyphs. For example, with the case of the lowercase l, none of the original parameters could even apply, so I had to create a set of new parameters for the letter l and letters similar to it such as f and t. My new parameters for these letters were as follows:

- Original glyph: ascender terminal matches terminals of ears and ascenders of other letters
- SALT1: remove left portion of letter
- SALT2: flip SALT1 variation horizontally
- SALT3: flip SALT2 ascender only
- SALT4: Remove bottom half of original glyph
- SALT5: Cut SALT2 diagonally and remove bottom half

Again, I was not able to completely adhere to these parameters for the thin vertical letters due to the variability inherent in the Latin alphabet, but they were useful in creating stylistic alternates one through five for the letters f, i, j, l, and t. I also found there were some relationships between letters that created interesting variability, such as using SALT3 and SALT4 of the lowercase t when used in words with two ts such as setting or better. Working
with the font and typesetting different words resulted in many surprise relationships that I tried to exploit as much as possible.

Plate 27. Model Q version 9, lowercase f and t and their stylistic alternate versions 1-5 (2015) (Digital)

To increase variability in the font and because of its unique form I gave the lowercase l its own set of parameters:

- Original glyph: ascender terminal matches terminals of ears and ascenders of other letters
- SALT1: letter is flipped horizontally
- SALT2: ascender terminal matches terminals of descenders of other letters
- SALT3: flip SALT2 horizontally
- SALT4: Remove bottom half of original glyph
- SALT5: Cut SALT2 diagonally and remove bottom half

**Plate 28: Lowercase l, with SALT1-SALT5 (2015)**
(Digital)

---

**Character Encoding for Alternate Glyphs**

All digital fonts carry with them, embedded in the font file, something called a character encoding standard, which according to FontLab, Ltd. (2006) is a table that defines the relationship between characters and the codes that the computer uses to recognize them properly in a document or when displayed onscreen (p. 125). The problem with mutable typefaces is that they do not adhere to standard character encodings because each letter has one or more custom stylistic glyphs, which do not have their own Unicode codepoints. This means that the computer cannot recognize custom-made glyphs, unless it is told how to do so. In this case, I had to create custom encoding tables for Model Q, which was a way to organize the glyphs in the font window while working in FontLab Studio 5. It would also enable me to later modify the font language and create classes in order to organize the glyphs panel while using the font in an OpenType-compatible software like Adobe Illustrator or InDesign.

In order to create the custom encoding table I had to first give each alternate glyph an appropriate name that adheres to FontLab Studio 5 naming standards and that is consistently applied throughout the font, and then I had to write a separate text document that ordered the
letters according to how I wanted them to be shown. In this case I named each alternate glyph A.salt1, a.salt1, B.salt1, B.salt2, b.salt1, etc. according to pre-existing naming standards.

Following is an excerpt of the beginning of my “Default Encoding Alternate” code, which makes use of the naming conventions I created for the stylistic alternate glyphs. The order they are placed in the code reflects the order in which they will appear in FontLab Studio 5 (Plate 29).

**Plate 29: Excerpt from encoding table (2015) (Digital)**

```plaintext
%%FONTLAB STUDIO ENCODING: 1001; A Glyph Definition Encoding
%%GROUP:Default Encoding Alternate
breve
ring
hungar
ogonek
caron
dotlessi
fraction
fi
fl
Lslash
Lslash
Zcaron
Space
exclam
...
A
A.salt1
A.salt2
A.salt3
A.salt4
A.salt5
```

This encoding table results in a glyph order that appears as follows in Plate 30.
Custom encoding is not enough, however to order the alternate versions once they are exported into a font file format. Next, the FEA must be modified to show that stylistic alternates are grouped with their original glyph versions. Once all of the glyphs were created, named properly in FontLab Studio 5, and placed in the appropriate order in the custom encoding table, I would be able to modify the FEA (Feature Definition Language) in order to group the alternate versions properly with their original glyphs, which allows for ease of organization, and is a necessity for exporting fonts to an OpenType format. Without this step, the alternate versions would not be placed into submenus with their parent letters (Plate 30). To do this I inserted the FEA code into the OpenType Panel in FontLab Studio 5. The brackets, in the FEA language, “enclose components of a glyph class” (FontLab, Ltd., 2006, p. 834).

**Plate 31. FontLab Studio FEA defining which stylistic variants will be shown with which original glyphs (2015)** (Digital)

```plaintext
feature salt {
  sub A from [A.salt1 A.salt2 A.salt3 A.salt4 A.salt5];
  sub B from [B.salt1 B.salt2 B.salt3 B.salt4 B.salt5];
}```
sub C from \[C.salt1 C.salt2 C.salt3 C.salt4 C.salt5\];
sub D from \[D.salt1 D.salt2 D.salt3 D.salt4 D.salt5\];
sub E from \[E.salt1 E.salt2 E.salt3 E.salt4 E.salt5\];
sub F from \[F.salt1 F.salt2 F.salt3 F.salt4 F.salt5\];
sub G from \[G.salt1 G.salt2 G.salt3 G.salt4 G.salt5\];
sub H from \[H.salt1 H.salt2 H.salt3 H.salt4 H.salt5\];
sub I from \[I.salt1 I.salt2 I.salt3 I.salt4 I.salt5\];
sub J from \[J.salt1 J.salt2 J.salt3 J.salt4 J.salt5\];
sub K from \[K.salt1 K.salt2 K.salt3 K.salt4 K.salt5\];
sub L from \[L.salt1 L.salt2 L.salt3 L.salt4 L.salt5\];
sub M from \[M.salt1 M.salt2 M.salt3 M.salt4 M.salt5\];
sub N from \[N.salt1 N.salt2 N.salt3 N.salt4 N.salt5\];
sub O from \[O.salt1 O.salt2 O.salt3 O.salt4 O.salt5\];
sub P from \[P.salt1 P.salt2 P.salt3 P.salt4 P.salt5\];
sub Q from \[Q.salt1 Q.salt2 Q.salt3 Q.salt4 Q.salt5\];
sub R from \[R.salt1 R.salt2 R.salt3 R.salt4 R.salt5\];
sub S from \[S.salt1 S.salt2 S.salt3 S.salt4 S.salt5\];
sub T from \[T.salt1 T.salt2 T.salt3 T.salt4 T.salt5\];
sub U from \[U.salt1 U.salt2 U.salt3 U.salt4 U.salt5\];
sub V from \[V.salt1 V.salt2 V.salt3 V.salt4 V.salt5\];
sub W from \[W.salt1 W.salt2 W.salt3 W.salt4 W.salt5\];
sub X from \[X.salt1 X.salt2 X.salt3 X.salt4 X.salt5\];
sub Y from \[Y.salt1 Y.salt2 Y.salt3 Y.salt4 Y.salt5\];
sub Z from \[Z.salt1 Z.salt2 Z.salt3 Z.salt4 Z.salt5\];
sub a from \[a.salt1 a.salt2 a.salt3 a.salt4 a.salt5\];
sub b from \[b.salt1 b.salt2 b.salt3 b.salt4 b.salt5\];
sub c from \[c.salt1 c.salt2 c.salt3 c.salt4 c.salt5\];
sub d from \[d.salt1 d.salt2 d.salt3 d.salt4 d.salt5\];
sub e from \[e.salt1 e.salt2 e.salt3 e.salt4 e.salt5\];
sub f from \[f.salt1 f.salt2 f.salt3 f.salt4 f.salt5\];
sub g from \[g.salt1 g.salt2 g.salt3 g.salt4 g.salt5\];
sub h from \[h.salt1 h.salt2 h.salt3 h.salt4 h.salt5\];
sub i from \[i.salt1 i.salt2 i.salt3 i.salt4 i.salt5\];
sub j from \[j.salt1 j.salt2 j.salt3 j.salt4 j.salt5\];
sub k from \[k.salt1 k.salt2 k.salt3 k.salt4 k.salt5\];
sub l from \[l.salt1 l.salt2 l.salt3 l.salt4 l.salt5\];
sub m from \[m.salt1 m.salt2 m.salt3 m.salt4 m.salt5\];
Plate 32. How the glyphs will appear for use in an OpenType-compatible software like InDesign, which is shown here (2015)
(Digital screenshot)
CREATING A RANDOM FEATURE

When considering installations for my thesis exhibition, I wanted there to be an interactive piece had a random element to it as a way of mimicking the concept of Eco’s Model Q—the idea that meaning is constantly evolving and changing and based on variable factors at any given moment. To try and capture this feeling of chaos, I began researching how to pull from the glyphs randomly while typing in a document in OpenType-compatible software. I found some code on the Adobe forums that featured a way to do this in a pseudo-random fashion. Although a ‘rand’ function exists, it is not supported by any applications due to a large range of technical complications (FontLab Forum, n.d.). Instead, I was able to find coding that would make it appear as if the different glyphs were being loaded randomly as a user is typing, although it would not be a true random feature. The code was written by Thomas Phinney, which I then adapted to work with the naming conventions of my font. Phinney explains the process as follows: “This...is for a case where you have eight different glyph forms for each character. While typing, the first character is shown using the first form ("default"), and each character after will use the next ascending glyph set, until you run out, when it wraps back to the beginning of the cycle” (FontLab Forum, n.d.).

To do this I had to create specific classes that grouped each glyph and stylistic alternate glyph into a group based on its stylistic variant number.
Plate 33. Classes created in FontLab Studio 5 to enable pseudo-random substitution feature (2015)
(Digital screenshots)

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salt3: A.salt3 B.salt3 C.salt3 D.salt3 E.salt3 F.salt3 G.salt3 H.salt3 I.salt3 J.salt3 K.salt3 L.salt3 M.salt3 N.salt3 O.salt3 P.salt3 Q.salt3 R.salt3 S.salt3 T.salt3 U.salt3 V.salt3 W.salt3 X.salt3 Y.salt3 Z.salt3 a.salt3 b.salt3 c.salt3 d.salt3 e.salt3 f.salt3 g.salt3 h.salt3 i.salt3 j.salt3 k.salt3 l.salt3 m.salt3 n.salt3 o.salt3 p.salt3 q.salt3 r.salt3 s.salt3 t.salt3 u.salt3 v.salt3 w.salt3 x.salt3 y.salt3 z.salt3
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<td>6</td>
</tr>
<tr>
<td>salt5</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

52 glyphs in this class
From there I had to use the FEA again to call upon different classes and to use substitution in order to create the pseudo randomness.
Plate 34. Pseudo-random code written by Thomas Phinney, then altered to fit my naming classes (2015)  
(Digital)

feature calt {  # Connection or other contextual Forms  
    # Latin  
    lookup rotate {  
        sub @default @default' by @salt1;  
        sub @salt1 @default' by @salt2;  
        sub @salt2 @default' by @salt3;  
        sub @salt3 @default' by @salt4;  
        sub @salt4 @default' by @salt5;  
          } rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    lookup rotate;  
    } calt;  

The pseudo-random feature worked very well when typing text in either Adobe Illustrator or Adobe InDesign. The only time the pseudo aspect of the code was noticeable was when the same letter would be type repeatedly in sequence, which then revealed that the code was in fact following a cycle which was repeated, resulting in the same pattern of stylistic alternate glyphs when repeated. Nevertheless, the result of the pseudo-randomness when typing in a word-processing program was interesting and mimicked the lack of control I wished to convey in my work, or the seemingly random nature and chaos of communication. I wanted
to incorporate this effect in my thesis show, but as I began to try to utilize the feature in programs other than Adobe InDesign or Illustrator, I found many incompatibility issues. Most software does not support OpenType alternate glyph substitution, including Processing. Processing is an open-source Java-based programming language that many graphic designers and artists use in interactive works and games because it allows you to create visual environments that are also interactive. Processing has font compatibility, but does not work with OpenType features, so I was not able to incorporate this feature into my thesis exhibition.

Nevertheless, once I finished the design of the glyphs, the encoding tables, and the FEA coding to create the proper order for my font Model Q, I was able to export it as an OpenType file, install it on my computer, and use it as working font when creating the projects for my thesis exhibition.
CHAPTER 4

INTER/RA TEXT: THESIS EXHIBITION

The concept of Umberto Eco’s Model Q is not unequivocal, nor is the concept of deconstruction. When you explore notions of the imperfections of language, and try to nail down the concept that there is no ultimate truth, you are inherently dealing with confusion and obfuscation; it is the nature of the topic. In order to best represent these concepts, I aimed to create a thesis exhibition that also obfuscated and confused. Instead of simply showing work that was clear and communicated one or two straightforward messages, I aimed to create an environment that represented the Model Q; viewers were thrust into an exhibition that they had to navigate and excavate with no guidance. I had no intention for their interpretations of the pieces other than hoping that they would depart the works feeling confused, and thinking that there is no ultimate truth to anything, and that words, though a medium of communication, are imperfect at best.

The show was largely inspired by three multimedia artists working today: Pierre Huyghe, Janet Cardiff and George Bures Miller, all of whom incorporate interaction, technology and multimedia in their exhibitions. The Pierre Huyghe Retrospective brochure from the Los Angeles County Museum of Art (2014) summarizes one of the ideas behind Huyghe’s work:

A temporal and spatial instability characterizes the works themselves, which can exist simultaneously as artworks, events, and exhibitions. The encounters that occur in Pierre Huyghe are not choreographed but unplanned; in what he refers to as “autogenerative systems,” the artist constructs a set of conditions and allows events to unfold following their own course. (p. 2)

Much like my interest in Jan Van Toorn’s reflexive design, I also wanted to create a space in which the viewer activated the work in non-choreographed ways. In Huyghe’s (1999/2015a) Atari Light and Human Mask (2014/2015c), the viewer enters a space from one of seven
directions, thrust into an environment that includes multiple interactive elements as well as a projected film, but no direction as to whether or not the elements were meant for interaction. A dog runs through the exhibition (Huyghe, 2012/2015b), as does a person wearing an LED light mask (Huyghe, 2010/2015e) that obscures their face. These additional elements add to the chaos and disorder.

As a result of the many complex elements, the viewers stay in the space for some time, watching the film and slowly working their way around the pieces, excavating their own meaning. Similarly, I wanted to create a space in which the viewers would come to their own conclusions only after exploring the works for a period of time, working through their initial confusion.

Lost in the Memory Palace by Janet Cardiff and George Bures Miller (n.d.) which I saw at the La Jolla Museum of Contemporary Art in November of 2013 was a multi-room immersive exhibit that required viewers to spend extended periods of time in the space, building narratives for themselves after interacting with the elements in the exhibits. The work Dark Pool (1995) was a mixed media, audio-video-installation:

> On entering the doorway to The Dark Pool, one encounters a realm of suspended animation, an elaborate assemblage of furniture, carpets, books, empty dishes and mechanical paraphernalia. As viewers move through the installation, they activate acoustic components of the work—the silence of the space is broken by strands of music, echoes of stories and fragments of dialogue. (Cardiff & Miller, 1995)

I spent about three hours in the Dark Pool, examining all of the different elements and making sure to visit each audio piece, listening to the fragmented narratives until I was able to create my own story. Like the Huyghe exhibition, I was attracted to this idea of excavation, to the viewer entering into a dialog with the work, and not being spoon-fed the concepts easily. For my exhibition I wanted to capture the reflexive qualities of contemporary art, in the context of graphic design.
Another of the main concepts behind my thesis exhibition was to create a type specimen “poster” or “book” for my font, Model Q. A common historical artifact of the graphic design profession is the type specimen, which details how a font might look when used at certain sizes or in italics, bolds, etc. The type specimen book or poster became a source of pride for font foundries, resulting in many beautifully printed catalogs of typefaces. These exist in digital versions now, and can be found on any font foundry website. In a similar manner, I wanted my thesis exhibition to be one large, interactive type specimen project that highlighted the typeface Model Q in a variety of media: print, screen, space and motion. In a larger sense, the exhibition was not simply a type specimen, but also a representation of the many media in which graphic designers must work in a contemporary context. To this end, I created four pieces in different mediums: a printed book, an interactive
game-like piece with a projected screen, a large sculptural installation in a dark room, and an animation. None of the pieces were named, as part of the intention for users to create their own meaning, but each exhibit represented a “typical” graphic design project that has been deconstructed, uprooted or confused in some way. I will refer to the pieces from now on as *Infinity Book, Glyph Randomizer, The Labyrinth*, and *PowerPoint Animation*, respectively.

**PROJECT 1: PRINT—** *Infinity Book*

The first project, which represented the first step in the viewer’s journey through the exhibition space, was the *Infinity Book*. The book is one of the earliest forms of graphic design projects, and because I saw my exhibition as a larger metaphor for the design profession itself, I wanted to include a book as a nod to graphic design history. However, the traditional format of most books is the codex format, which began to replace the scroll around the beginning of the Common Era (Meggs & Purvis, 2012, p. 31). The codex format contains sheets of paper “folded, stitched and combined into codices with pages” (Meggs & Purvis, 2012, p. 31). However, instead of having a book with pages, and a regular beginning and end, I wanted to create a book like my earlier project, *The Book Repeats*, that looped and had no beginning or end. Instead, the viewer could enter the book at any point in its narrative, and leave at any point. This infinite loop was a palpable representation of Eco’s Model Q—the net that he describes that has no borders. The book represents the circularity of representation and interpretation. Every sign is dependent upon another sign for meaning, and everything said by one person can be interpreted in a myriad of ways by another person. This potentially sends the interpretant in a never-ending loop, as each word or sign leads to another, which leads to another, into a recursive oblivion. My book, in the same manner, worked as an infinite loop.

I achieved this by creating an infinite origami folding book which consisted of twenty-four sheets of paper folded together into a grid-like pattern which interlocked, folded flat and could be opened from the center, and folded outward, continuously. Over the course of the 64 panels created by the book’s grid, I created a visual exploration of the process I underwent to create my thesis, starting with some of the initial exploration I discussed earlier, and ending with the final letters from the designed font. The panels were thin sekishu paper that I screenprinted and then laminated onto the folded origami book which was crafted out
of a thicker mulberry rice paper. Visible beneath the panels, which I printed directly onto the folded book and which were seen through the transparent sekishu papers, was a depiction of a labyrinth, to demonstrate the constant starting, stopping and dead-ends I encountered while attempting to create the font from beginning to end. The visual was also a nod to Eco’s *Semiotics and the Philosophy of Language*, in which he discusses the notion of the labyrinth as a fitting metaphor for understanding language.

**Plate 35. Infinity Book, 16” x 16” (2015)**
(Mulberry and sekishu papers, acrylic paint panels, screenprinted and glued, photo by author)
Plate 36. Infinity Book set on a table, inviting viewers to interact with the book (2015) (Photograph by author)

For the purposes of the exhibition, I placed the Infinity Book on a table, with an anachronistic lamp and chair, which did two things: the first was that it invited the viewer to sit and read the book, showing that it was not simply a piece to be looked at, but to be interacted with. Secondly, the lamp and chair worked as a juxtaposition to the contemporary pieces in the exhibition, which added to the confused atmosphere and also were a nod to the history of the book as an archaic yet still widely used art form.

**PROJECT 2: DIGITAL/GAME/SCREEN—GLYPH RANDOMIZER**

The second piece that the viewers might encounter while moving through the space was the screen piece that included an interactive glyph randomizer, built using the visual programming language Processing and microprocessors which triggered a projection of my letters that shuffled randomly as users press the buttons. This piece worked on multiple levels. Firstly, as part of the “Type Specimen” aspect of the exhibition, it displayed all 312 of
the letter glyphs in their entirety (I excluded punctuation and numbers), introducing the font for the users to examine both individually as glyphs, and as words. I also gave it an arcade game feel with the use of large glowing arcade buttons that invited the viewers to interact. With this use of the screen projection and the game element, the piece was another nod to elements of the graphic design industry: the user interface and gaming genres that are part of the overall category of design in a contemporary context. Additionally, the reverse projection of the letters onto a transparent screen using a transparent projection film gave the letters a futuristic feeling, as though they were floating in space. This referenced a sort of holographic feeling, which again, was a nod to the graphic design industry and the multi-disciplinary direction in which it is headed.
Plate 37: Glyph Randomizer screen, 53” x 35” (2015)
(Photograph by author)
Secondly, the randomized nature of the piece referenced the fluidity and infinite possibilities of the Model Q. There was an element of absurdity due to the randomization: users could try to create words by clicking through the glyphs, but were often met with nonsense words or unexpected words as a result. Many viewers tried to spell out their names, directly inserting themselves into the piece. This was a direct representation of the pragmatic aspect of semiotics—the element of the interpretant and their direct interaction and how they created meaning. Without the interpreter, there would be no working piece, which in a sense was a representation of the creation of meaning. Additionally, the more people that participated with the piece, the more it represented the relationships between interpretants when deriving meaning. If I push one button, I get a letter, but if six people push one button, we create a word together. This mirrors the derivation of significance between two or more people communicating.
Plate 38. Glyph Randomizer *button detail* (2015)
(Photograph by author)
(Photograph by Olga Werner)

**PROJECT 3: ENVIRONMENT—*THE LABYRINTH***

The third project in the exhibition, which I call *The Labyrinth*, was also inspired by Umberto Eco’s Model Q and the concept of the boundless net, which he describes as being the most apt representation of his concept. With this piece I wanted to create a physical manifestation of this boundless net, as seen through my own lens: a window into my brain. I achieved this by screenprinting various texts onto CNC router-cut pieces of clear acrylic and twinwall polycarbonate plastic sheets which all were interlocking pieces that stood in a maze-like arrangement which viewers could walk through and experience on a visceral level.
Additionally, the pieces were set into a dark space, and I provided viewers with headlamps, which they wore in order to navigate through the “labyrinth.”

Plate 41. A view of the room that holds The Labyrinth (2015) (Photo by author)

The headlamps represented the sense of navigation and excavation required by the interpretant to derive their own meaning in the space. The lights also cast shadows of the letterforms on the walls, which moved and shifted as a representation of the ethereal and ever-changing nature of language and significance.
Plate 42. Users were given headlamps to navigate through the dark room (2015) (Photograph by Olga Werner)

The texts that were screenprinted onto the acrylic and polycarbonate sheets were all printed in my font, and all drew from all of the writings that were foundational to me both during my time as an undergraduate student and a graduate student. The seemingly random nature of the texts chosen reflect my chaotic thought process and my own derivation of meaning while working on this project as well as my own personal growth as a graphic designer, and on a larger scale represent the absurdity of the Model Q and the difficulty of communicating meaning. The texts that I used included excerpts from the following:

“Song of Myself” by Walt Whitman

Wuthering Heights by Emily Bronte

“The Oven Bird” by Robert Frost

McLuhan Hot and Cool by G.E. Stearn

A Thousand Plateaus by Deleuze and Guattari

The Call of Cthulhu by H.P. Lovecraft
The Return of the King by J.R.R. Tolkien
Macbeth by William Shakespeare
Our Lady of the Flowers by Jean Genet
Fight Club by Chuck Palahniuk
“The Garden of Forking Paths” by Jorge Luis Borges
“The Rime of the Ancient Mariner” by Samuel Taylor Coleridge
Semiotics and the Philosophy of Language by Umberto Eco
Of Grammatology by Jacques Derrida
Fahrenheit 451 by Ray Bradbury.
“Much Madness is Divinest Sense” by Emily Dickinson
“Fuck Content” by Michael Rock
“The Idler No. 31” by Samuel Johnson
House of Leaves by Mark Danielewski

In all cases, the excerpts from texts that I chose represented some sort of labyrinthine system, crisis in identity, or confusion over the perception of something. This exhibit was the most personal for me in that it represented my previous pain regarding my failure to be successful as a novelist. In a way I was reaching out to all of the words that were not mine because I could not find my own.
Plate 43. A total of 38 different screenprinted acrylic pieces created mutable and shifting shadows on the wall (2015) 
(Photograph by Olga Werner)

The room itself is a literal representation of a semiotic net, which the interpretant—or viewer—literally shines their light of semiosis into. The shadows twist and interact, and like text in the Eco or Derridean fashion, are never the same and are fluid and changeable. The interpretants activate the space with their own excavation/light/presence. Without the presence of the interpretant the space is dark. The meaning doesn’t exist. Like the Model Q, the shadows interact with each other—they communicate like people do, and change based upon their interactions.

In terms of it as a representation of graphic design in a contemporary context, this piece emulates the design of signs on a busy street, or environmental design as created by designers like Paula Scher.
Graphic design as a profession is not limited to flat and small elements like pages in a book or images on a screen. Designers must also grapple with elements in space, like signage for buildings or outdoor spaces, museum exhibitions, building and city navigation, etc. *The Labyrinth*, like the other pieces in the show, is a representation of the complexity and many aspects of graphic design and design in general in a contemporary context, and how designers do not work in only flat media.

**PROJECT 4: TIME—**POWERPOINT ANIMATION

For the fourth and final piece, I projected an animation on the wall that worked as a *reductio ad absurdum* PowerPoint in which I start out by stating it is a how-to video on how to create a font in “10 Simple Steps.” As the animation plays, however, it begins to become
more and more complex, and the viewer realizes that creating a font is anything but simple and takes many more steps than ten. As the animation progresses, the absurdity of the content demonstrates the random chaotic nature of how we derive meaning and how at any given moment, a person could interpret something in a myriad of unpredictable ways. The animation shows degradation or a deconstruction throughout time as well, representative of how meaning shifts and changes unexpectedly.

Plate 44. *The projection of the PowerPoint Animation on the wall of the exhibition space (2015)*
*(Photograph by Olga Werner)*

During the course of the animation I also inserted one-frame stills of various quotes that related to my thesis, brief flashes employed to cause discomfort in the audience. Additionally, I used the element of sound. The PowerPoint begins with accompanying white noise, which morphs into atmospheric music as the animation begins to change, ending with high-intensity electronic music with a quick beat, inspired by the theme music from the film *Bladerunner*. Throughout the piece, I am slowly reading excerpts from texts from the
previous list of works that I used throughout *The Labyrinth*, interspersed with technical excerpts from the *FontLab 5 Studio Manual*. The idea behind the soundtrack was to create an atmosphere of uncertainty with an element of futuristic foreboding.

At the end of the animation previous frames are revisited, but in a distorted and psychedelic fashion, flashing in and out with motion blur, repetition and distortion in order to further emphasize the complexity of the notion of the Model Q, and the absurdity in trying to find meaning in anything. The animation ends with a quote from Wolfgang Weingart, emphasizing the importance of grabbing attention over traditional design that communicates its message clearly in a legible fashion.

**Plate 45. Frames from PowerPoint Animation (2015)**
(Digital screenshots)

How to Design a Typeface in 10 Simple Steps
The changes start subtly; the letters begin to change from the standard Arial font used in PowerPoint presentations to letters from Model Q, then back again.
2a. Look at other typefaces for inspiration
Occasionally I inserted one to two frames of text that included a message from the philosophical readings that dealt with deconstruction or semiosis. The idea was to grow discomfort and uncertainty in the audience subconsciously.
I also began to create visual glitches to signal to the viewer that something was changing or deteriorating slowly.
The background colors began to shift away from the standard white of a basic PowerPoint presentation to present the message that all is not what it seemed at the beginning.

To highlight the process of font creation I also included clips of working in the software while I created the font with an increased frame speed. Additionally other elements began to
present themselves in the video, such as letters on a grid, moving and shifting in size to further demonstrate the chaos of communication and how the typeface was representative of that chaos in both process and final design.

5. Fix the little details, letter by letter
17. Decide if you want a 1 or 2-story a and g.
18. Reduce thin strokes at critical junctions.
19. Decide a symmetrical or asymmetrical structure for n, m h, u and r.
20. Add consistent upright stem shapes for each letter with an ascender.
21. Next draw i, j, f and t.
22. Decide the shape of the dot on the i and j.
23. The tail of the t, if it has one, should be complementary to the j and f.
24. Next complete the v, w, and y, which are simply shorter.
25. Next do k, x, and z. These follow the structure of their capital versions.

At this point I drew from steps for font creation from Cheng’s (2005) Designing Type to further demonstrate the complexity of designing a typeface.

The steps were placed in a scrolling film credit style, and a motion blur was added to further exaggerate the complexity and amount of work needed with the creation of a font.
After showing footage of working in Illustrator, I then showed the process of moving vector drawings from Illustrator into FontLab Studio 5.
Drawing on the imagery of the boundless net, I began layering images of grids, which could be seen as metaphor for both Eco’s net and labyrinth in his descriptions of the Model Q concept.

I incorporated the same colors used in my exhibit *The Labyrinth*: magenta, green, and blue, as representative of RGB; all the colors in the spectrum of light.
Because one aspect of the show was to be a variation of a “type specimen” I wanted to incorporate all of the glyphs and their alternates in multiple forms, which are also shown here in the animation.

Another one-frame slide flashes a phrase from Derrida’s *Of Grammatology*. 
To increase complexity, the animation begins to move into 3D space as words and the grid begin to rotate on their axes.
I show the code necessary to organize the alternate glyphs (SALTS) in FontLab Studio 5 to further increase confusion and complexity.
Toward the end of the animation a large $Q$ is formed out of a labyrinth-like pattern to further emphasize the metaphor.

Imagery from earlier in the animation is shown again, this time in chaotic and repeating forms to conclude the video with unsettling visuals.
How to Design a Typeface in 10 Simple Steps
Random elements, blurred lines and video static are all used to emphasize a feeling of absurdity and lack of control.
What is the point of being legible, when nothing inspires you to take notice?

-Wolfgang Weingart

The animation concludes with this quote from Wolfgang Weingart, which brings the absurdity of the video into focus within the context of the graphic design field. Could a lack of legibility, which causes the viewer to have to work to understand the message, be a potential cure for the saturation of imagery we battle today? Can that moment of confusion as caused by Eco’s concept of the Model Q be something that graphic designers might exploit as a way to reach a viewership that is jaded or disinterested in anything but the most shocking of visuals?
CONCLUSION

The exhibition *Inter/ra Text* worked on many levels: it was a representation of contemporary graphic design in that it highlighted a font in multiple ways and uses, but on a deeper level was also a metaphor for the semiotic model Q—the notion that there is no ultimate truth, but instead a vast network of relationships that must be viewed together to form any sort of cohesion, and results only in the *appearance* of cohesion: an apparent ultimate truth with no substance behind it. The exhibition also served as an artistic interpretation of the process and journey through which I traveled during my time in graduate school. It was a metanarrative of sorts; the process itself became a representation of the Model Q, and in a re-iterative and recursive manner, the exhibits all represented both a beginning and an end. The typeface was not possible without the process, which was why I chose to include it as a part of the show, using the apt allegory of traveling through a
labyrinth as a way to demonstrate my search for meaning and its application to graphic design when dealing with semiotic theory.

Lastly, I hope that my font would perhaps solve the problem that many graphic designers and also communicators must face today, which is one possible way to capture attention in a world saturated with words, imagery and messages. When every person reads an average of over 100,000 words per day, how is the graphic designer supposed to be able to fight through the pervasiveness of typographic imagery? Most of us are trained now to ignore most images we see in our day-to-day existence, perhaps partly as a defense mechanism to avoid being overwhelmed. Perhaps the creation of a font that causes reflexivity in the viewer—that forces the viewer to work to grasp the message is a way of cutting through the excess noise to which we have all become accustomed. What does it take to be different now? What does it take to capture a viewer’s attention? Perhaps the Model Q is a remedy for this: it causes the brain to fill in the blanks, which causes a moment of pause, and hopefully recognition of the message behind the typography.
REFERENCES


FontLab, Ltd. (2006). *FontLab Studio 5: Next generation professional font editor—PostScript, TrueType, Unicode, OpenType user’s manual for Macintosh* [Software manual]. Port Angeles, WA: FontLab, Ltd.


WORKS CONSULTED
