

## History

In 15<sup>th</sup> century Germany, Johannes Gutenberg invented the printing press and thereby revolutionized communication. From the printing press came the art of typography, commonly defined as “the style, arrangement, or appearance of typeset matter.” Typography as a whole has influenced and been influenced by history. Typefaces by themselves are forms of expression and have helped shape our political mindsets. You may not realize it, but typography is in your line of vision every minute of every day. You’re reading the essay-standard Times New Roman right now.

Gutenberg (1398-1468) wore many hats during his life. He was a blacksmith, and goldsmith, but his work as a printer and publisher led him to the invention of mechanical moveable type printing, a development widely regarded as the most important of the modern period.<sup>1</sup> In his development of the printing press, Gutenberg also invented the process of using oil-based ink in printing.

The first book printed on Gutenberg’s press was a 42-line bible, printed in a typeface that became known as textura.<sup>2</sup> He made between 180 and 200 copies, 21 of which are known still to exist in full.<sup>3</sup> His bible, and the capabilities of the printing press, marked a significant shift in the way material was produced and the range and rate at which it was distributed. Prior to Gutenberg, all information was recorded by hand, a tedious and relatively inefficient process, on parchment or vellum (prepared skin of sheep, goats, or calves).<sup>4</sup> Through a complex process of placing individual letters into a chase (frame), followed by the application of ink to the handset type, printers were able to mass produce publications with the printing press.<sup>5</sup>

Printing spread relatively rapidly throughout Europe, making its way into England as early as 1476. Italic typefaces were designed around 1500 in Venice. It didn't take long for printers to begin printing original works instead of merely making printed copies of written publications. At the same time, the type itself was transforming into an art form of its own. Frenchman Firmin Didot made a monumental move creating what is known as the “modern” face. These fonts featured vertical shadings and unbracketed serifs, creating a more natural, pen-like look. Though Didot’s improvements may seem miniscule, the task was quite an undertaking. During the period of handset metal type, each letter was handmade and cast in iron, meaning even the simplest letters were anything but simple to manufacture.<sup>6</sup>

The industrial revolution brought many changes to the now booming printing and blossoming type design industries. With it came changes and developments in the technology, esthetics, and societal uses of typography.<sup>7</sup> Foundries pioneered a plethora of new designs and began marketing their varieties with specimen books, one of which I got to page through at the Silver Buckle Press. Mechanical inventions allowed for the creation of innovative typeface design while lowering typesetting costs. Among the new fonts designed were large, bold types for poster advertisements. Other new fonts of the time were sans-serif, meaning the individual letters had no structural protrusions, while others had exaggerated lines. Experimentation with line-height and thickness also produced a wide range of typefaces.

One of the biggest changes to the type industry was the mechanization of typography, specifically the Linotype machine. In 1884, Ottmar Mergenthaler successfully automated typesetting with the Linotype machine, a monumental development that has stood the test of time. It was operated through use of a keyboard, which caused brass matrices to be released from a magazine, sliding down chutes and automatically assembled in a mold. A line of matrices (the

individual letters) was then filled with molten lead alloy to cast what is called a slug, or full line of type with raised characters. After the printing cycle was completed, the matrices were melted back into molten lead alloy to be used again.<sup>8</sup>

With the introduction and widespread adoption of the Linotype machine, an oversupply of type foundries quickly became a reality. To avoid price wars, 23 foundries from across the United States merged to form the American Type Founders Company (ATF) in 1892. What were considered the best fonts from each individual merged foundry were selected for continued production. The introduction of Linotype and Monotype machines caused an explosion in publishing as they greatly reduced the cost of typesetting. Newspapers, magazines, books, and other publications also became cheaper and more affordable for the masses.<sup>9</sup>

The type industry went through a few more important developments in the printing process, such as phototype in the 1960's, before arriving at the digital type design commonly employed today. Phototype posed new problems for type designers. Because type designs are not protected by U.S. copyright laws, design piracy and plagiarism of fonts became a prevalent problem given the ease of copying photographic fonts.<sup>10</sup> In 1970, two typographers and a designer joined forces to found the International Typeface Corporation (ITC). The ITC began marketing and licensing new font designs, allowing designers to accumulate royalties from the rights acquired by manufacturers of typesetting equipment, film fonts, lettering, and the like. Still relevant today, the ITC effectively licenses many fonts commonly found online and in big brand names. For example, Adidas uses ITC Avant Garde Gothic Medium.<sup>11</sup>

Adobe Systems, creator and distributor of popular digital design tools such as Photoshop and Illustrator, was at the forefront of the digital type design revolution. Founded in 1984, John Warnock and Chuck Geschke took Adobe to the level of a traditional type foundry business by

following the classic formula of building the company on top of a proprietary typesetting technology, the PostScript page-description language.<sup>12</sup>

By the early 1980's, the widespread adoption of computers brought changes for the end-user, as well. Prior to the 1983, consumers were limited to the fonts offered by publishers, and further limited by the cost associated with using each font in various sizes. Steve Jobs, cofounder of Apple computers and typography aficionado, made a pioneering move to put the power in the hands, or fingertips, of the consumer by providing a font library on the Macintosh personal computer.<sup>13</sup> Additionally, the 1984 Macintosh model had a 72-dpi (dots per inch) screen resolution, a deliberate design element corresponding with the 72 points-per-inch measure used in typography.<sup>14</sup> From there word processing font choices have continually expanded, allowing the average computer user to employ a wide range of fonts to best express themselves in their work.

I recently had the opportunity to tour the University of Wisconsin's own Silver Buckle Press, which has a collection of printing press techniques, typesets, and examples of the versatility of handset type. Fortunately, I was able to schedule an exclusive one-on-one tour with Tracy Honn, Senior Artist and Director of the Silver Buckle Press. I was very glad to get my hands on the individual letters and see the iconic presses and drawers filled with fonts cast in lead alloy. One font I found particularly interesting in the scope of typography in the digital age was one made with wood blocks, but produced from a digital design. This wood type is a unique example of how digitization affects typography, though it's a development in the opposite direction of traditional digital adaptations of typefaces. Beginning in the 1980's, computers allowed type designers to replicate old typefaces for digital use and manipulation. In the case of the aforementioned wood type, a digital typeface was used to create letters purposed for use in a

printing press. Another element of printing that was astounding to experience in person was the skill and patience involved in setting type by hand. The craftsmanship involved in printing a simple sentence is remarkable compared to the simple and seemingly mindless process of swiftly typing the same sentence on today's computer keyboard.

[The previous section on the history of typography is printed in Times New Roman, the preferred font designated by UW Communications.]

### Historical influences

A RECURRING SOURCE OF INSPIRATION IN TYPE DESIGN, DATING BACK TO 105 C.E., IS THE COLUMN OF TRAJAN IN ROME, ITALY. UPON ITS CREATION, A SERIES OF MILITARY VICTORIES WERE RECORDED SPIRALING UP THE COLUMN IN A FORM OF HIEROGLYPHICS WHILE THE BASE SHOWCASED A SHORT TRANSCRIPTION OF TEXT. THROUGHOUT HISTORY THESE ROMAN CAPITAL LETTERS HAVE BECOME ARGUABLY ONE OF THE GREATEST INFLUENCES ON TYPE DESIGN IN WESTERN CULTURE.<sup>15</sup>

[This section is rendered in Trajan Pro, a digital typeface modeled after the inscriptions on Trajan's column.]

### Social influences

Society is replete, almost saturated, with examples of typography. Although printed publications are speculated to one day be obsolete, written word is still a main form of communication, be it through email or more widely viewed items such as posters, billboards, bus benches and the like, and everything in between. Imagine a world in which there existed only one font. It could be a beautiful font, but all would be boring and indistinguishable. There would be no brand recognition, nothing that really speaks to individuals, overall very limited expression. As typographer Beatrice Warde once said, "People who love ideas...will take a vivid interest in

the clothes that words wear.”<sup>16</sup> And she was right. Choosing the correct font can be almost as challenging, and sometimes as important, as the words themselves.

Fonts themselves are a form of expression. The aesthetic of a typeface conveys emotions, ideas, sentiments, even credibility and authority. In terms of font choice, Wingdings (☎)(■) would probably be a bad idea for a senior thesis. Inversely, a goodbye letter to campers at the end of a summer would be better written in **Comic Sans** than something machine-like such as **Lucida Console**. Similarly, a poster advertising a student-made military propaganda film would catch more serious attention using a font **EMULATING STENCILED LETTERS** than it would using a **bold serif font**.

In addition to expressing ideas and aesthetic rapport, some fonts have fostered an iconic appearance that connotatively and denotatively embodies the identity of the brand. Think of such companies as Disney, perhaps most recognizable by the signature D, and Coca-Cola. Both companies forego official symbol-based logos for the company name emblazoned in a signature typeface. Apple has, to an extent, established brand recognition through the use of Myriad Pro on all products, product packaging, marketing materials, and internal communications. Furthermore, Apple has proprietary ligatures (a character consisting of two or more letters), most prominently seen in their iPod Shuffle product line. Other brands largely associated with fonts include Yahoo! and Ferrari. Even the hip-hop mogul Wiz Khalifa uses a signature font called **Candy Script**.<sup>17</sup>

It would be impossible to write on typography without mentioning, nay, elaborating on the importance of Helvetica. Developed in 1957 by Swiss type designers Max Miedinger and Eduard Hoffman, the font was originally called Helvetia, meaning Switzerland. During the Cold War, and following two world wars caused in large part by nationalism, Helvetica was designed to be a universal font that could be used in every

nation without conveying any degree of nationalism.<sup>18</sup> It was designed to invoke no inherent meaning and be widely adoptable with admirable clarity of form.<sup>19</sup> Visual features of the font include the square dot on the ‘i,’ a symmetric ‘p,’ ‘d,’ and ‘b,’ and the curved lowercase ‘t.’ The change to Helvetica, meaning Swiss, achieved the neutral feel by naming it for a style instead of a nation. The name has a second level of neutrality in that Switzerland had been and still is a neutral force in international affairs.

Today Helvetica is unavoidable. Fortunately, as a Netflix loyalist, I had access to a documentary produced in 2007 aptly titled ‘Helvetica.’ The film looks at the burgeoned typeface as part of a more encompassing conversation about how type affects our daily lives. Shot in the U.S., England, the Netherlands, Germany, Switzerland, France and Belgium, the documentary captures a worldly perspective of Helvetica, including accounts from some of the biggest names in the design arena. After watching, it’s impossible to avoid recognizing the font in society. It can be found on iOS products (iPhone, iPad, iPod Touch) as the default font, it’s BMW’s default font, both American Airlines (the largest airline on the planet) and American Apparel’s font of choice, seen on all New York subway maps, and perhaps more relevantly, it’s the font used in area labels in Memorial Library. It’s the font NASA used on all space shuttles and it’s the font used on your dreaded United States tax forms. It’s also the font used in the opening credits of NBC’s “The Office.” Helvetica can be seen all over the world in promotional materials, ads, street signs, and posters. There has yet to be a font introduced into society that has had such a profound and lasting effect on and from history, politics and society as Helvetica. While often criticized for its lack of personality, Helvetica’s

achievement of establishing a symbol of stability following high degrees of turbulence throughout the world is remarkable.<sup>20</sup>

[This section was printed in Helvetica.]

### Political influence

Typography has influenced politics since the invention of the printing press. In fact, the world's first book, Gutenberg's 42-line bible, is a political and religious statement in itself and reflects on the importance of organized religion of the time period. Gutenberg's press later facilitated the printing and subsequent dissemination of Martin Luther's writings. Luther famously challenged the authority of the Pope and Roman Catholic Church. His theology is considered a catalyst for Western Christendom's division into several churches, contributing to his controversial status in history.<sup>21</sup>

**Typography has been influenced by politics in more latent and subconscious instances. In 1913, Edward Johnston was commissioned by London Transport to overhaul their publications into an integrated design scheme. The result was Johnston Sans, or Underground Railway Block-Letter, a sans serif typeface created with inspiration from the Roman lettering on Trajan's Column. World War I was on the horizon, caused in part by imperialist expansion, fostering the will for Britain to stay ahead of German innovation. Johnston purposely designed the typeface using imperialist Roman influence, strengthening the British Imperialist identity of the time and reassuring London citizens that the British Empire would prevail in the face of war. Johnston's designs are still used by London Transport today.<sup>22</sup>**

[The previous section is typed in P22 Johnston Underground, the typeface discussed above.]

Typography has played a role in 21<sup>st</sup> century American politics, as well. Most of Obama's 2008 presidential campaign materials feature Gotham, a typeface designed in 200 by Tobias Frere-Jones, who used New York City as his main influence and source of creative inspiration. The events



of September 11, 2001 brought New York City, historically nicknamed Gotham, and all of America to a frighteningly vulnerable status. Resulting in the election of the first black US president, employing Gotham typeface was reminiscent of a moment of crisis in American history and carried with it a promise to rebuild this strong nation. Obama's campaign, like many other political movements, focused on a couple words representative of his platforms and goals: Hope and Change. The use of Gotham paired with these words created iconic symbolism for America, further driving home his ability to instill hope and facilitate change in America. After Obama's victory, the US Census Bureau adopted Gotham for the identity of the 2010 census. In April 2011, Frere-Jones proudly announced the production of a custom version of the font with serifs. "Can we add serifs to Gotham? For the President of The United States? Yes we can."<sup>23</sup>

[The previous section is presented in Cicle Fina, an open-source version of Gotham.]

### Typography in the digital age

This paper on typography encompasses and transcends many changes in the industry since the introduction and wide adoption of computers. At the most basic level, using the word processing software Microsoft Word is the modern-day Linotype machine in the sense that it's the most efficient way to put type on paper. Secondly, the founding goals of the ITC to combat piracy and allocate royalties to type designers are still enforced today and many type designers license their own work. The digital age has complicated that gatekeeper function over the past 40 years, namely through means of downloading font sets over the internet. An example relevant to my paper is the preceding paragraph on Obama's use of Gotham. The typeface is exclusively licensed by type foundry Hoefler and Frere-Jones and, as much as I would appreciate having access to the iconic font, \$170 is a gratuitous expense for a paper structured by free research. As noted above, I used a free variation of Gotham called Cicle Fina.

While computers may pose a threat to some degree, the type industry has mostly benefited from the use of digital technology in type design. Adobe was the early bird in the field of computer-aided type design with their creation of PostScript Type Manager in 1985. As a page description language, PostScript processed vector-based letters from the computer onto a printed page.<sup>24</sup> PostScript Type 1 was the most commonly used format, however its biggest drawback was the jagged distortion of the letters when scaled. Apple and Microsoft teamed up to produce TrueType to rival the increasingly popular Adobe PostScript. Aside from some early compatibility issues using TrueType formats, TrueType fonts excelled in the industry and are generally the preferred font format for productivity suites such as Microsoft Office and Apple iWork. Their biggest advantages over PostScript fonts was the use of quadratic curves for outlines and the inherent necessity to only have one file to function properly while PostScript Type 1 fonts needed two files.<sup>25</sup>

[The previous section is printed in Adobe Caslon Pro to further emphasize the important role Adobe played in pushing type design into the digital age.]

A popular trend in new media is to animate song lyrics and famous monologues with kinetic typography. These videos allow for expression through music and highlights the inherent power in words and ideas, in addition to illustrating how the creator perceives the tone of the song or speech by choice of typeface and colors. The words themselves bring to life themes in the lyrics and can be manipulated to emulate elements of a song such as the kick drum or addition of electric guitar.

Typography has even made a presence in the ever-growing mobile phone application market. Apps such as What the Font allow the user to capture an image of fonts in real-life applications and specify the typeface in question.

## Conclusion

When used correctly, typography can be a potent means of expression. The average citizen, though unaware of it, is influenced by varying typefaces on the daily as they are exposed to approximately 5,000 advertisements and communications every 24 hours. Creative-types at advertising agencies around the world toy endlessly with brand messages until reaching the perfect synthesis of words and font. Mike Bass, Creative Director at Knupp & Watson & Wallman advertising agency in Madison, WI enjoys the look of Knockout, a Hoefler and Frere-Jones type family, based on vintage boxing posters.

With the incredible capabilities computers offer the type design industry, today there's a font for everyone. Papyrus would be fitting for a title page of an essay on the Dead Sea Scrolls while a flyer advertising a semester apartment sublet could employ **Cooper Std Black** to catch attention. Furthermore, typography can have serious implications on and from history, society, and politics. Assuming the written word will remain a dominant force in visual communications sends the imagination on a shopping spree, conjuring schemas of the typefaces and fonts to expect in the future.

## Citations

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