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User Experience as a Rhetorical Medium: User at the Intersection of Audience, Reader and Actor

Áine Doyle

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COLLEGE OF THE
Holy Cross

Department of English

The Thesis of Áine Doyle,

entitled User Experience as a Rhetorical Medium: User at the
Intersection of Audience, Reader and Actor,

**submitted to the English Department in partial fulfillment of the
requirements for graduation with English Honors, has been read
and approved by the following:**

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Approved for the English Honors Program:

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Date

User Experience as a Rhetorical Medium:
User at the Intersection of Audience, Reader and Actor

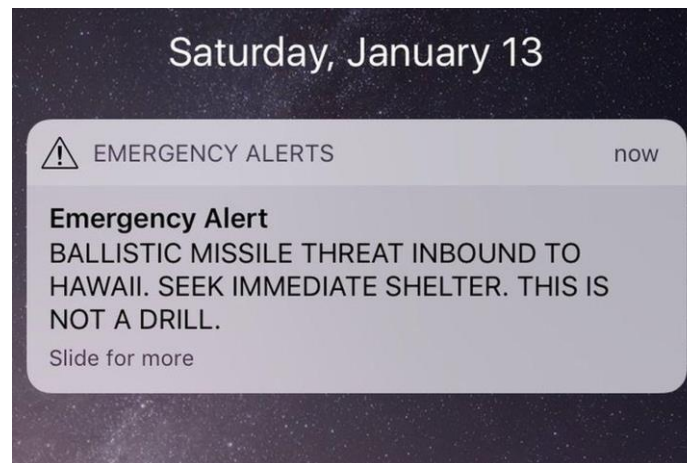
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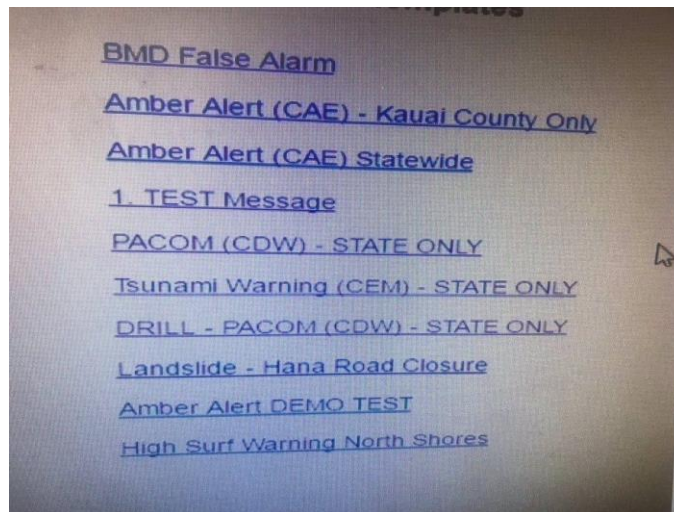
Introduction

On the morning of January 13th, 2018, during a period of heightened tension and threats exchanged between the US and North Korea, residents of Hawaii received an emergency alert warning of an incoming ballistic missile attack, causing complete panic and chaos across the entire state (Nagourney et al.):



(Gabbard)

After thirty minutes of hysteria, with residents frantically seeking shelter and calling loved ones believing that a missile was about to strike, residents received a new alert on their phones informing them that the previous notice was a false alarm—there was no impending attack, and the residents of Hawaii, though emotionally shaken, were safe. An investigation into the incident would later reveal the cause of the false alarm: a faulty user interface on which a state worker had made the simple, mundane mistake of clicking the wrong link.



(Hawaii Emergency Management Agency)

Although the image above is an approximation of the user interface behind this incident, it is easy to see how the state worker made the mistake (Liao). The only difference between the link that issued the emergency missile alert and the drill that was supposed to be issued was a single word drill (Hern). All of the links are the same color, size and font, and are dangerously close to one another—it would be easy to mistake any of those links with one another. There was no difference between any of these links’ second confirmation pages—each of the confirmation pages provided a generic notice asking if the user was “sure they want[ed] to send the alert” (Lecher). The “BMD False Alarm” link at the top of the image also wasn’t part of the interface at the time of the incident—during the thirty minutes of chaos across the state, state workers frantically worked to manually send out a “false alarm” alert to quell the statewide panic and fear.

In a world where technology and digital interfaces have become integrated into everyday life, we have become reliant on digital user interfaces and technologies for tasks ranging from communicating with friends and family, to paying bills, to looking up directions as well as a plethora of other mundane tasks. As the Hawaii False Missile Alert demonstrated, we also rely on these technologies during high-stakes emergencies, such as the recent coronavirus pandemic,

where social distancing has become the norm and universities across the world have had to quickly find ways to transition from in-person classes to online distance learning. We have suddenly become even more reliant on the power of good user experience to continue our lives as close to normal as possible—whether that is working remotely, continuing education online and staying connected with friends and family over video-chat and other social platforms—while still remaining physically separated and socially distanced from one another.

User experience (UX) design is exactly as it sounds like: it is a design process with a primary focus on the intended audience's—the user's— anticipated needs and wants while using the product or service. While UX design can be applied to any kind of product or industry, the term was popularized by large tech companies like Apple, Google and Amazon and is most commonly associated with digital interface design—that is, how a digital product or service and its features are presented on the screen for the user to interact with and use. UX design is a form of visual rhetoric that, like rhetoric in general, is inherently interdisciplinary, tapping into fields such as psychology, computer science, sociology, art, business and several other areas. It is a field based on computer science, liberal arts and a good deal of empathy, calling on designers to picture and imagine the emotions of their intended audience and employing a wide range of skills to predict the user's needs and how to meet them in a usable, accessible and creative way.



(Redish 192)

UX design requires and incorporates a wide range of skills stemming from different disciplines that otherwise would not intersect; this is reflected in the different roles seen on a UX design team, such as developers, designers, researchers and writers. It calls for creative problem-solving, collaboration, and strong communication in order to make a successful and usable interface that would keep the intended user content, and to create a seamless user experience—everything in the user interface is put there intentionally, for the user, to create a user experience that is smooth and seamless but also constantly updating and improving. When the intended user interacts with the interface, using it should come as second-nature, just as reading is to a literate person. It is a field where empathy for the user is a prerequisite—if a user experience designer cannot empathize with or find ways to meet the user’s needs or wants, they simply will fail to create a successful interface and a smooth user experience.

Although UX design has had a strong presence in the for-profit world for the past twenty years (companies have entire teams and business units dedicated to UX), its presence in the

liberal arts is relatively small. This is surprising, especially when considering how technologies and digital interfaces had become integrated into our everyday lives well before coronavirus—technologies such as smart phones and laptops, and digital platforms such as social media, search engines and online news sites have become a primary mode of communication and source for research and information. However, despite the prevalent use of technology in everyday life and in academic research, the limited mainstream discourse about these technologies and digital interfaces tends to be limited to the negative effects social media such as bullying, shorter attention spans and the circulation of “fake news” and misinformation (which is not exclusive to partisan 21st century social media, but rather a practice that can be traced back to the advent of the printing press). UX and interface design extends to far beyond social media: it includes any digital interface from academic search engines and digital humanities projects like EServer.org and Project Gutenberg, to commercial online services such as Netflix and Google Maps, to interactive and ever-updating sites during major emergencies such as the coronavirus maps many of us are checking on a daily basis. These interfaces are undeniably a part of our everyday lives, delivering and communicating information to us in a visual, multimedia language that we subconsciously read, interpret and internalize.

The goal of this project is to demonstrate how digital interfaces are bodies of visual language that can be “close-read” and interpreted critically, just like any other traditional text; digital user interfaces, like poetry and novels, have form and content that complement and shape the meaning and interpretation of the other. It is meant to encourage academic discussions about digital interfaces to go beyond whether social media is “good” or “bad” to how digital interfaces are structured, why they are structured the way they are, and what effects these structures have on the way they communicate information and content to the user. Digital interfaces are just

extensions of written texts—they employ more visual language to be interpreted by the user, but language nonetheless.

In order to understand how exactly digital interfaces are extensions of the traditional text studied in English literature and Rhetoric, it is important to understand the characteristics and behavior of a digital interface user. As we will see, digital interfaces can be critically read just like traditional text, but they are read in a different way—the user “reads” the interface, but also engages with it in ways that a reader doesn’t engage with a text. The digital interface is an interactive medium where the user physically responds to what is shown on the screen (like an audience member watching a performance in a theater), shaping their own user experience and playing a critical role in their interaction with the computer to get the results they are looking for (like an actor on a stage or in an interaction). Because of the nature of the contemporary user interface, the user takes on a unique combination of characteristics in order to successfully engage with the interface that is typically not seen in the recipients or “users” of traditional forms of text and interactive performance.

This project examines how the user resembles a traditional audience-member, a reader, and an actor in order to deliver a better understanding and picture of who and what the user of a digital interface is and why user interface and user experience design is a mode of rhetorical communication. Beginning with “User as Audience,” we will look at how users adopt a collective consciousness and how user experience designers tailor their interfaces toward the intended users or audience. “User as Reader” further adds to this discussion by examining how the act of engaging with a user interface is ultimately a solitary act; users, though part of a collective consciousness like an audience, are physically separated from each other, reading and interpreting the information on the interface like it is a text. Finally, “User as Actor” discusses

how, in addition to reading and interpreting what appears on the screen, users physically engage and interact with the user interface and computer, similar to how actors behave in a social interaction or performance. Tapping into a wide range of academic disciplines and sources—from Philosophy to Computer Science, from Plato’s *Phaedrus* to contemporary studies on search engines for elementary school children and interviews with UX developers and designers from Google—the chapters demonstrate how the user embodies these characteristics and how the critical study of user interfaces is not only practical and relevant to the current time, but also complements the long tradition of studying texts through a literary and rhetorical lens.

Chapter I: User as Audience

The Audience of User Experience Design

On May 19th, 2019, 13.6 million people across the US tuned in to HBO at 9 pm EST for the explosive finale of the network's hit series *Game of Thrones*, a fantasy television show that had been running for 9 years. The live telecast of the finale, which was considered "one of the most anticipated" finales "in television history," broke HBO's record for the largest telecast audience in the network's history (Pallota). 13.6 million people watched the episode in shared time and space (the space being the medium of the television) from separate geographic locations across the country, in the comfort of their own homes. These 13.6 million people would be joined by an additional 5.7 million viewers who would watch the series finale through streaming services or television replays later in the night, adding up to a grand total of 19.3 million people who watched the episode the evening it premiered (Pallota).

These numbers are from May 19th alone. When delayed viewing was taken into account, each episode of the series' final season had an average of 44.2 million viewers, meaning that over 20 million viewers—over half of total viewers—did not watch the show during its premiere. Unlike a showing of a film in a cinema or going to a theater, each viewer watched the show on their own time and through their own means, whether that meant watching on their phones during a train ride home after work, watching it on TV with friends from their own homes or watching on their laptop in a college dorm room. (Pallota) Yet, despite not watching the film in shared time and space, there was a shared audience response to the series' finale.

Following the conclusion of the episode into the next day, television critics, journalists and ordinary viewers took to a variety of platforms to respond to the episode and express their opinions over it. Right after the initial airing of the finale, *Business Insider* journalist Rich Feloni

took to Twitter to express his disappointment in the show, noting that even though he “defended [the show] all season” he found the finale to be “atrocious. Horrific. A travesty” (Feloni). On NPR’s *All Things Considered* the following day, journalist Audie Cornish and cultural critic Glen Weldon discussed the response online, describing social media to be “up-in-arms,” and mentioned a circulating “petition to re-do the entire last season” (NPR’s *All Things Considered*). This widespread, vocal disappointment was a shared audience reaction— the majority of the viewers shared similar responses and emotions toward the show, many of which were shared online via tweets, comments, and posts.

The audience of *Game of Thrones* serves as an example of what an audience of User Experience design looks like. In a world where technology permeates everyday life and makes entertainment such as films, television shows and music more readily accessible, each person experiences these means of entertainment individually, in their own time and space. The audience is fragmented temporally and spatially where individual audience-members watched the episode at different times, through a variety of platforms, in their own personal spaces. However, despite being separated in time and space, the audience altogether seemed to adopt a shared consciousness: they had shared expectations for the show, which they shared with each other through other digital platforms, that ultimately fell short and triggered a collective sense of disappointment and outrage online.

The viewers of *Game of Thrones* and their reactions exemplifies the audience of digital user interfaces, where each individual user engages with the interface in their own time and space but is also part of a much larger group of people using the product or service with similar desires and goals—for example, watching a good finale. Despite their individual engagement, the experience is in essence the same— they see the same interface and use it to achieve a similar

goal or satisfy a certain desire, whether that is using a database like *EBSCO* for research for a school project, buying something on Amazon, or streaming an album on Spotify.

But is a collective of thousands to millions of users, using the same interface, an “audience?” What if someone is engaging with a website on their phone at midnight, while someone else is on the same website on their laptop during the day? Even experiences on the same website can differ— one user might use Amazon to purchase a brand-new phone case offered by Amazon Prime, while another might be buying a used book through a third-party seller. If each individual member’s experience with and desires from the interface differ, what makes a cohesive “audience” for the user interface? What draws the audience together, and what allows them to adopt a collective consciousness?

Pathos and Understanding the Soul of the User

The number of individuals in the audience does not affect whether an audience is still an audience— an audience is an audience no matter the size. The individual members of the audience and how many there are, however, can affect the characteristics of an audience. The different definitions of audience listed in the OED supports this notion— although each refers to an audience as a collective, they imply different kinds of audiences. The old uses of “audience” in the OED, for examples, refer to “...a judicial hearing or hearings. Also: the opportunity to have a case or complaint heard in a formal assembly or court of law” (audience, n.).

The very origin of the word suggests the power the audience has—they “judge,” react and make decisions based on the content (in the case of the definition, the “case” or the “complaint”) presented to them. They have clear authority over the presenter in a court of law. Although the context in which we use the word “audience” has changed with time, the fact that the audience “judges” the performance, giving them power and influence over it, has remained

constant. The members of the audience may not be “judges” in “judicial hearings” or a “court of law,” but they are judges in other contexts, such as theater performances, a TV series finale, or an experience on a website. The size of the audience doesn’t matter in this—there could be only one person as the audience (such as in a royal hearing as the OED definition suggests, or there could be millions of people, like for *Game of Thrones*.

Because the audience is ultimately a collective group of “judges,” the presenter should have an idea of who exactly is in the audience in order to prepare for the best possible performance—he or she needs to use their knowledge of who the intended audience is to figure out what techniques to employ, an idea that traces all the way back to Plato’s *Phaedrus*:

Since the function of oratory is in fact to influence men’s souls, the intending orator must know what types of soul there are. Now these are of a determinate number, and their variety results in a variety of individuals. To the types of soul thus discriminated there corresponds a determinate number of types of discourse. Hence a certain type of hearer will be easy to persuade by a certain type of speech to take such and such action for such and such reason, while another type will be hard to persuade.

(Plato, *Phaedrus*)

To know how to persuade and speak to their audience, Plato argues, an orator needs to know the “soul” of his audience: who they are, what they want, and what it takes to convince them of the orator or presenter’s argument. The orator or presenter must also be able to differentiate or “discriminate” between different types of souls in order to identify the best “type of speech” and mode of persuasion to use, as well as to anticipate what the audience reactions might be— if the audience mostly consists of young children, for example, using simple words and analogies would be more effective than using more complex terminology and concepts that only adults might understand. Other demographic information—such as socio-economic status, ethnic background and education level—should also be taken into consideration while an orator is studying his audience and preparing to perform; for example, a talk about US politics might go

over very differently depending on where you are in the country due to differing political views, experiences and opinions—an orator must be prepared for this. He should understand the pre-existing views and opinions of his audience before he presents to them; the better prepared he is for the audience’s possible reactions, the more smoothly his performance will go. This background examination of the audience is vital to effective persuasion.

User experience design takes Plato’s examination of the soul and turns it into a quantitative, contemporary process of evaluating the targeted audience. Just as how Plato— and many other classical rhetoricians—push that the argument be tailored toward the intended audience, user experience designers put users first: the entire design and execution of a product or service is for ease of use and understanding for the targeted user audience. Even though the digital medium is beyond what Plato could have imagined, the basics of effective rhetoric and effective communication remain—there needs to be an understanding of who exactly will be at the receiving end of specific instances of communication and rhetoric. UX designers must know and be empathetic towards their users to the same extent a good rhetorician knows his audience, and use that information accordingly to design an effective and successful product.

In *The Essential Guide to User Research*, Mona Yang calls for “researching with empathy in mind,” meaning that researchers should strive to understand their users’ emotions, what triggers certain reactions, and how to address them (Yang). In digital communication, this empathy propels the design process and is a variant of pathos in literary and rhetorical studies—designers must anticipate their users’ reactions to certain planned features in their design. Although for different purposes, designers and rhetoricians alike strive to identify and define their audience’s emotions ahead of time in order to identify the best way to approach the intended topic. An example of this for digital media would be the rating cards shown before a

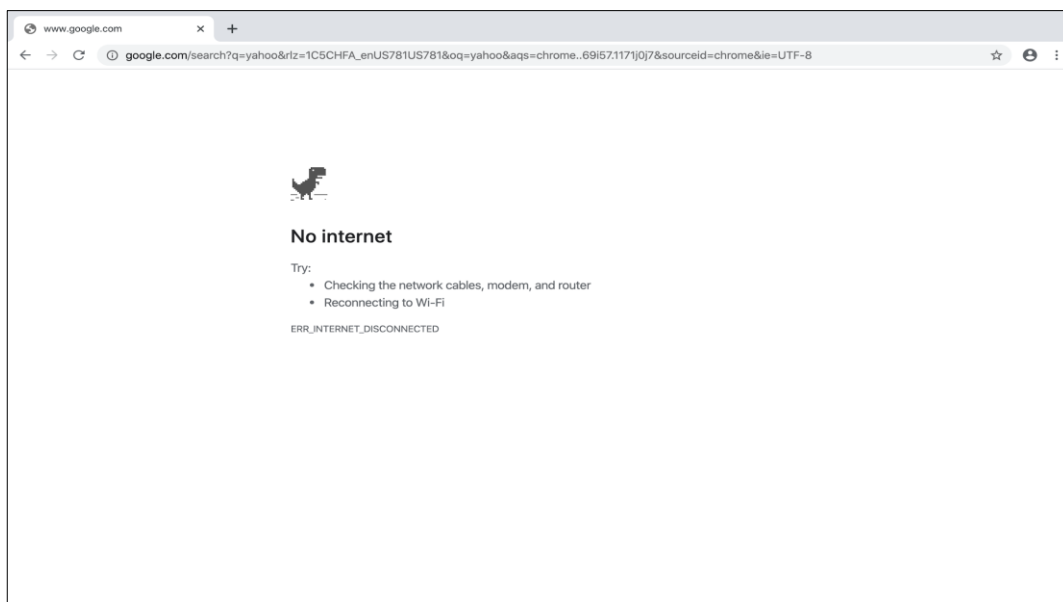
movie or a trailer denoting the movie's rating and why exactly it is rated that way: the rating is given based on the expected age and maturity demographic of the audience, and showing the rating card prepares the audience for what to expect in the upcoming content. These disclaimers and warnings are especially important if the audience covers a wide demographic and if there are any audience-members who might not match the overall audience (in the case of the movie ratings, a child watching a PG-13 or R-rated movie with their family). UX designers employ similar techniques to keep their users engaged with their product or website, where they develop certain features for their websites or products based on their understanding and predictions of how the intended users would react. The goal is to keep the audience or user content in order to keep their attention and thus, decision making, directed toward the performance— whether that is a speech for classical rhetoricians or an interface for designers

One way large tech companies try to keep their users engaged with their products is through building in “Easter eggs” (hidden messages, images or features in an electronic medium) into their designs. Google in particular has a plethora of Easter eggs embedded into their services and designs. Some of these Easter eggs are meant for pure amusement, such as the “do a barrel roll” search in Google, which causes the page to spin around:



(The Telegraph)

Others, however, are designed to lessen user frustrations and outrage during technical difficulties. For example, when there is an error with the internet connection in Google Chrome, Google's internet browser, a dinosaur appears on the screen along with an error message explaining what went wrong:



(Jung, Gabriel and Bettes 2014)

The purpose of the dinosaur is meant to quell any excess frustration that comes with unreliable internet access, as well as to keep the user on the Google Chrome browser until the issue is resolved. When the user clicks the up arrow key on their laptop, the dinosaur starts moving—the image transforms into an infinite runner game in which the user must use the arrow keys to make the dinosaur jump over or dodge obstacles. The image of the dinosaur itself is a play on the situation—it alludes to a “pre-historic” time before internet connection (*The Keyword*, 2018). This is underscored by the pixelly, black-and-white design and the “rigid” animation, resembling an old-style “vintage video game”—both allude to an earlier time, poking fun at the type of technical difficulties taking place (*The Keyword*, 2018).

Though the design of the easter egg game is simple, it has proven wildly successful—the game is played 270 million times a month on both laptop and mobile, with the majority of plays coming from geographic regions with limited or unreliable accessible mobile data such as India, Brazil, Mexico and Indonesia (*The Keyword*, 2018). Repeated gameplays are encouraged by the personal high scores displayed above the game. The simple game transforms a frustrating situation into a fun one—it is designed to keep the user content on the browser until internet connection is restored by diverting the user’s attention away from the problem to making the dinosaur run for as long as possible. Google Chrome’s runner game is a small example of many in which user experience teams and designers employ rhetorical tactics in order to keep their wide-spread audience engaged and content. Instead of spoken language, like a traditional orator would use, UX designers and developers employ multi-media elements to reach the same goal of keeping their audience’s attention, as well as maintaining user retention. Just like the orator needs to keep their audience’s attention in their performance, user experience aims to keep users

coming back to their product and services, as well as keep each session of use as long as possible.

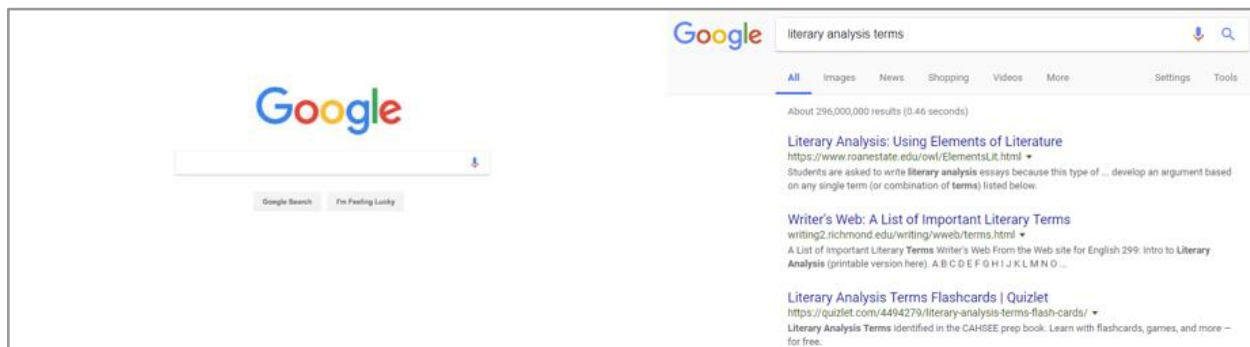
A Tailored User Experience: Knowledge Journey

User experience design, however, is not just about creating gimmicky games and features in order to maintain user and customer retention. It is also not a field exclusive to for-profit technology companies like Google— user experience design has a growing place in academia across a wide range of disciplines ranging from the humanities to STEM. The final products of the user experience design process extend far beyond the purpose of entertainment. This rhetorical, creative process builds powerful, accessible tools and platforms such as websites, databases, and search engines that make information much more accessible and consumable to different kinds of audiences.

In order to create a successful interface, designers and developers must know and understand how their audience comprehends, navigates and engages with different information. In her book *Search Engines for Children: Search User Interfaces and Information-Seeking Behavior*, Tatiana Gossen discusses how she and her team conducted a user study to better understand how children and adults interact with search engine user interfaces such as Google and Blinde Kuh Suche (BKS), a children's search engine often used in German primary schools. Gossen and her team studied how children in third and fourth grade and adults reacted and interacted with each user interface, using the data and feedback from each demographic to inform the design of their own search engine Knowledge Journey.

In the user study, each adult and child were given informational and navigational search tasks to complete on both search engines. Informational searches involve finding information on a topic that the user believes is on the web, and navigational searches are completed when the

user has a specific website in mind— children “tend to employ informational search” while adults employ navigational search (Gossen 87-88). Google and BKS also have different features, making both visually and formattically distinct from one another.



(Google.com)

Google’s homepage and search results pages have clean, simple designs with a lot of whitespace. In the search results page, different font colors and sizes distinguish between different kinds of information: the name of the webpage is a hyperlink in larger blue font— clicking on it leads the user to the webpage—, the site’s link is in small green font, and a description of the webpage’s contents appear in black font about the same size of the link font. Keywords that the user typed in the search bar found in the description are highlighted in bold. Towards the top of the page, underneath the All, Images, Shopping, Videos and More tabs, the number of search results appear in light gray to give the user insight into how much information they have at their disposal based on their initial search. This feature is especially helpful if the user struggles to find the information they are looking for and decides to either broaden or narrow down their search query, but also doesn’t distract from the more important search results—it is there if the user is looking for it and wants to refer to it. The Google search engine delivers all relevant information to the user in a simple, direct way that helps the user find the information they are looking for quickly and efficiently.

Although BKS is also a search engine designed to deliver information, its interface design is geared towards educating young students on how to use a search engine through multimedia elements such as colorful images and text that is visually appealing, stimulating and engaging for a younger targeted audience:



(Gossen)

Unlike Google, BKS has a much more detailed search process, with search topics broken into subcategories with accompanying images and icons on the left hand menu and main body of the page. Each subcategory and search result is divided and distinguished by physical boxes and lines, not whitespace like on Google (Gossen 92). Each search result on BKS consists of a picture, summary, relevance rank, information about the result's category and lists the target age group (Gossen 92).

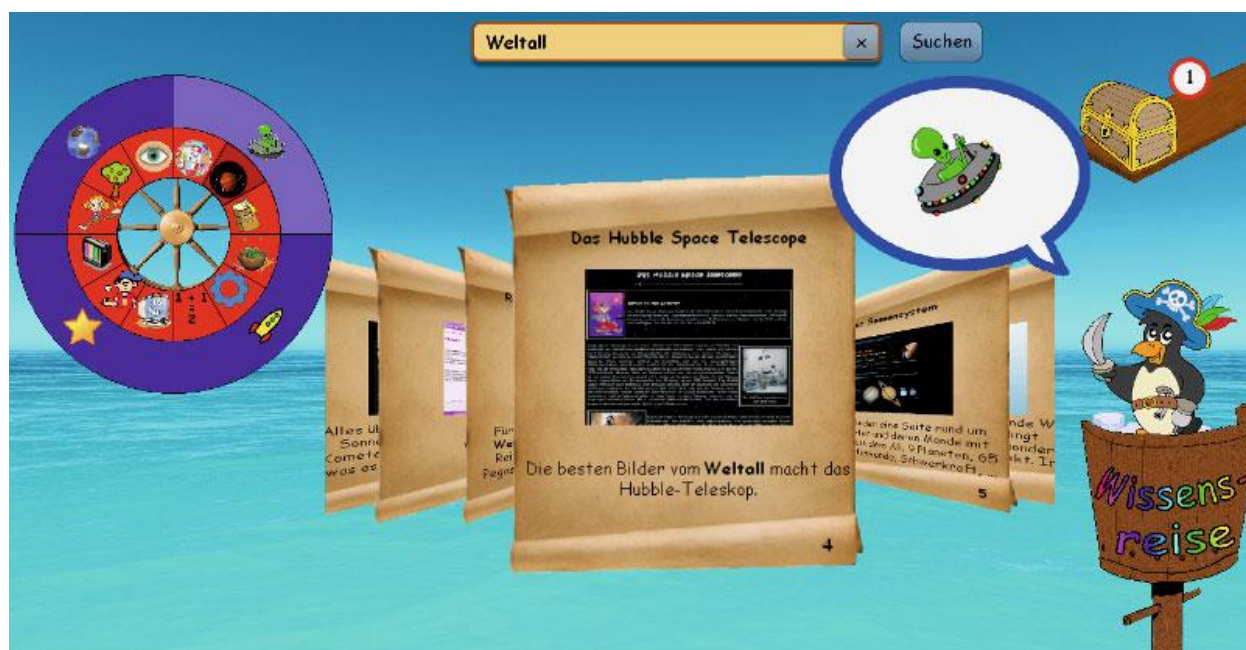
The main difference between Google and BKS is how they deliver and categorize information for users— while Google's design has a more implicit approach of color coding certain information and has a minimalist interface that makes use of whitespace, BKS delivers information more explicitly, telling its audience what information is what and uses multimedia elements to do so. Google's design assumes that their audience has the digital literacy skills to decipher the information, while BKS is designed for an audience at the beginning of digital literacy and is new to using search engines. The two search engines were designed with two very

different audiences in mind. This shows in Gossen's user study— adults “claimed that the very colorful and visually overloaded design of BK frustrated them” and found BKS to contain ““very unclear...elements that distract from the actual search,”” while children “liked that BK is ‘lovely and colourful,’ has ‘not only text, but picture’ and ‘offers a lot of information for children’...” (Gossen 98). Children also liked how “one ‘can not only search but also use many other features of BK,” meaning the different categories listed on the homepage. The ways in which children and adults reacted to each search engine interface reflects how the two websites were designed and used different “expressive equipment” or “fronts” with different intended audiences in mind.

Even though BKS was designed for children and many of the user study's child-participants reacted positively to the interface, Gossen and her team noted some important critical feedback from the children who used it. Some children preferred using Google over BKS— while all adults “preferred the simple Google user interface,” 58% of the children liked Google over BKS, since they were already familiar with Google as a search engine and Google searches brought back more information and search results than BKS (Gossen 98). Gossen also notes that some of the multimedia elements in BKS were not employed in the best way they could have been and that BKS could benefit from “better relevance cues in media and texts for children”— the pictures, for example, were “not well selected as they [did] not lead to an improvement in children's performance” (Gossen 110). Gossen also noted that in both BKS and Google, children get “frustrated” and “give up faster than adults” when there are “too many search results” or if “they do not find the desired search results”— BKS's interface, though colorful and full of engaging multimedia elements, did not curb the frustration of a failed search (Gossen 110). BKS, though more popular among the children than the adults in the user study, did not provide the same positive user experience for its intended audience as Google did for its

adult audience; BKS's features and interface did not entirely reflect the needs of the “souls” of the children who were meant to use it.

Through this user study, Gossen and her team took the feedback on BKS and used it to inform the design of a new search engine interface for children, which they named Knowledge Journey:



(Gossen 120)

In Knowledge Journey's user interface design, Gossen employs a combination of visual, audial and textual elements with strong “relevance cues” to make the interface more appealing to children as well as guidance features to help curb frustration during difficult search queries. The team transforms the user experience into a narrative: the online search process is turned into a treasure hunt game, where the young user is supposed to “take a journey to gather relevant search results” (Gossen 120). Each feature of the user interface is transformed into a metaphor that plays into the treasure hunt narrative.

The new guidance feature— which BKS lacked all together— takes the form of a pirate penguin who explains to the young user how to search, provides spelling correction in the case of misspelling, and enlarges images of menu categories (such as a spaceship) with animations (Gossen 120; 121). The guidance figure is designed to help curb unproductive frustration and keep the user from giving up on their search efforts when it is initially unsuccessful (Gossen 120; 116). The pie chart on the left of the screen is the search engine’s navigation menu, juxtaposed on top of a ship’s steering wheel. The chart is divided into broad categories for the user to click on, with subcategories for the user to find underneath (Gossen 120). Search results appear on a piece of papyrus with a web page title, a thumbnail preview, a written summary and a result ranking, which the user can engage with using “simple point-and-click operations” (Gossen 123). Gossen’s team purposefully made the multimedia elements on each papyrus roll large, since children tend to “consider larger areas of the UI to be clickable” (Gossen 123). Knowledge Journey also has a feature where children can store relevant search results in a treasure chest for later— each result saved becomes a page in a book that appears on the screen when the user clicks on the chest. The size of the chest reflects the number of results saved— the larger the chest, the more results are stored in it.

The “front” of the treasure hunt metaphor transforms the process of using a search engine into an experience that is engaging and well-suited toward a younger audience. The multimedia elements that the team used are the “expressive equipment” that helped the children using the search engine “define the situation”— that is, going on a “journey” to find the information they were looking for (Goffman 22; Gossen 120). By controlling how the intended audience— the students— perceived the task of searching for information online, the UI designers were able to create a smoother user experience for them that was both visually and emotionally appealing as

well as constructive and productive—the interface was configured to help students learn from their mistakes if they didn’t get the results they wanted, as well as to give them visual aids in addition to text. They knew the soul of their audience, and anticipated their reactions to create a more intuitive and smoother experience, just as orators and performers do in their oral presentations—the designers simply just used visual elements instead of oral elements.

Adjusting to Shifting Audiences: From E-Server.org to Netflix

Even though UX designers tend to design their interfaces with a certain intended audience in mind, the audiences for an interface are never stagnant—their demographics and numbers are always changing and shifting depending on a large variety of factors including those who primarily view movies online. The kinds of audiences can also overlap: as seen in Gossen’s user study, both adults and children preferred Google as a search engine, even though Google’s interface design is more geared towards adults. On a platform like the internet where anyone can stumble upon any website, user experience designers are constantly tailoring their digital interfaces in order to draw in new and diverse audiences from unlikely places, making sure that their interfaces appeal to an overlapping audience covering different demographics, backgrounds and desires.

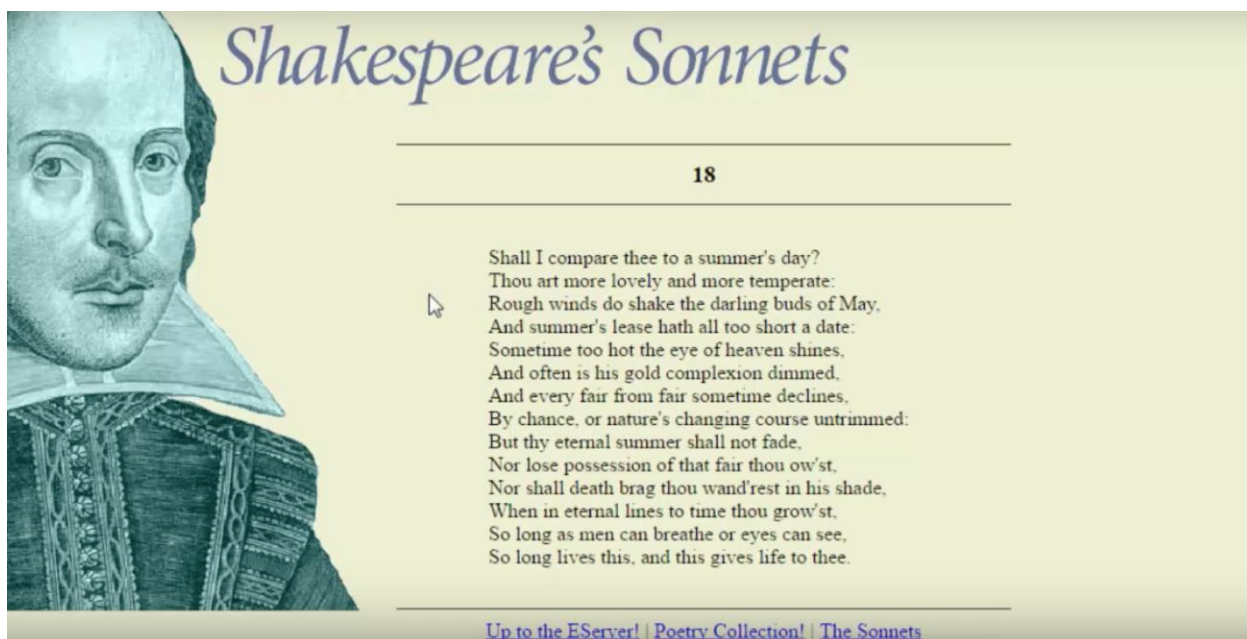
An example of drawing in overlapping audiences can be found in contemporary children’s movies—while these movies are blatantly targeted towards a younger audience, “film-makers are realising the artistic and commercial rewards of tapping a market that satisfies [multiple] audiences” and are striving to appeal to parents and sentimental teens in addition to children (*The Times*, 2010). Disney and Pixar, for example, have begun to incorporate subtle mature content and Easter eggs into films geared toward children in order to tap into older audiences, such as their parents and grandparents (*The Times*, 2010). Films like Pixar’s and

Disney's, artistically and masterfully use the same "front" of film to appeal to and speak to different kinds of "souls," drawing in a larger audience and increasing their own critical acclaim.

This rhetorical practice is not exclusive to film or user experience design. Like the practice of studying the audience— whether through "an examination of the soul" from the classical era or a quantitative, methodological contemporary user study—, the practice of adjusting the "design" of a film or user interface stems from classical oral tradition. In his book *Orality and Literacy: The Technologizing of the World*, Walter Ong, S.J explains that skilled oral narrators deliberately vary their traditional narratives because part of their skill is their ability to adjust to new audiences and new situations or simply to be coquettish" (Ong, *Orality and Literacy* 48). Likewise, the souls and needs of the original intended audience alone does not drive the design of a user interface— the design is influenced by the anticipation of a constantly shifting and changing audience as well as a constant shift in the context in which they are viewing the material. In order for a user interface to be successful, it's design must be flexible and shifting to suit an ever-changing audience, the time, and greater context.

One such example of this in academia is EServer.org, an open-access electronic publishing project in the arts and humanities founded by Professor Geoffrey Sauer from Iowa State University in 1990. During his first seven years of tenure at Iowa State (roughly from 2010 to 2017), Sauer updated and redesigned "more than 14,250 of the works in the bibliography" as well as introduced "new programming to enable features such as easy access from mobile devices" (Sauer 367). In addition, after finding that a third of their users were accessing the website through mobile devices such as cellphones and tablets, Sauer 'redesign[ed] the web edition of [Shakespeare's] *Sonnets* so that it adapts responsively to different screen sizes" where

“on larger screens it displays each poem with a large graphic, whereas on smaller screens such elements are hidden (so readers may focus on each poem)” (Sauer 368).



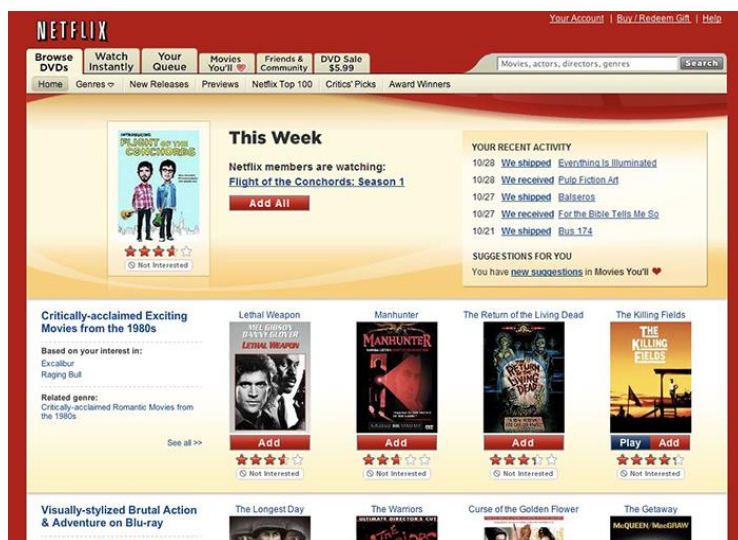
(eServer.org)

The redesign proved itself successful— after updating his website, the number of viewers who stayed on the website a substantial 4-29 minutes increased by 9.2% while the number of viewers who stayed for less than a minute decreased by 14% (Sauer 368-369). Sauer adjusted the design of the website based on the greater context and time— by making the website’s interface flexible toward the user’s device, he expresses awareness of common and ever-changing user habits as technology continues to advance.

The usability and UX improvements also helped bring in an enormous audience to the website— EServer has about 22 to 25 million visitors per year, and “is rated by Alexa (the division of Amazon that tracks website usage) as the third most visited digital humanities website in the world” (Sauer 367). As of 2017, EServer’s edition of Shakespeare’s Sonnets also appeared second in Google’s search results for “Shakespeare sonnets,” and is “the top edition from a scholarly website” (Sauer 368). As the usability of the website improved, the number of

viewers increased. Usability equates to “overall utility and project success;” by “improving [EServer’s] capabilities...[and] interfaces,” Sauer also expanded and “improved...audiences,” making a more usable and accessible digital humanities project.

Similar kinds of success can be seen in the commercial, for-profit realm as well. The media services provider and production company Netflix originally started as a DVD rental business; its original user experience was “purposely very transactional” and “based on the existing Netflix DVD-by-mail service that had been around for the previous 10 years” (Lindberg). The design mimics the concept of an actual video rental store; it was a “reimagin[ing] of] the store with a custom-tailored section for each user, promoting items which fit the user’s profile, and suppressing items which were outside of the comfort zone” (Ibrahim). “the website was an ecommerce platform where people could add DVDs to a shopping cart (their DVD Queue) and receive them in the mail within a few days, so they could watch them in their DVD players.



(Lindberg)

In Netflix’s website from 2007, when Netflix began to introduce streaming for a limited number of movies, the focus still remained on the idea of the DVD. The thumbnails for each film

resembled the cover of DVD covers. The user's "Recent Activity" appears in the top right of the screen, displaying the status of each DVD order. The movies were organized in shelves arranged by categories, some of which were based on the user's taste. For films that had both DVD and streaming option, the "Play" and "Add" buttons are of equal size, next to each other underneath the box cover image—streaming and ordering physical DVDs were of equal importance on the interface, with Netflix keeping to its original business of renting DVDs while still exploring new territory.

Netflix realized the potential of using streaming technology to study user behavior, and as general users' desires shifted towards the new streaming technology, Netflix adjusted its interface and design to "to make the experience better and more personalized" (Lindberg). It moved away from DVD delivery and began to focus more on streaming and "the consumption of video content," aiming to "immerse users directly in the content, in order to make it feel as if there is no extra interface on top of it."



(Lindberg)

The image on the left is Netflix.com from 2012, and the one on the right Netflix's 2018 interface. The 2012 interface more closely resembles the original Netflix.com that utilized physical DVDs—it has the same box cover-like images organized in different "shelves." It also had popups that appear when the user's cursor scrolled over one of the titles, which provides textual

information about the movie (such as the starring actors, age-rating and a synopsis of the movie), a star-rating, and clickable options to remove the movie from the list, or recommend it to someone else. Netflix's 2018 interface moves away from the traditional online video store look— instead of the portrait, box cover style images, each image preview is horizontal. When the user scrolls over the image, a clip of the movie or the trailer auto-plays— the user is immediately “immersed” in the content; they hardly notice the UI (Ibrahim). Netflix's changes to their interface represent the changes the company evaluated in their audience's desires over time. They identified a shift of interest in the speed of delivery for movies—as technology continued to advance and internet speeds increased, the company shifted their focus from DVDs (which took time to deliver and return) to streaming that offered immediate access to content. The changes to their interface reflects this change in what Netflix's audience and consumer-base wanted—they no longer wanted a platform in which they could “shop” for DVDs, but a platform that offered entertainment right away. It reflects the growth of streaming technology as well as the growing focus on a seamless, almost unnoticeable user experience in the technology industry. Like an orator would during a performance, Netflix had to reconfigure and redesign the story of promoting movies to an audience that had become increasingly digitally literate and demanding of their user experience.

Conclusion

The most effective oral and theatrical performances are ones where the audience doesn't notice the backstage, technical aspects of the production— in a flawless performance, the audience is caught up and immersed in the argument and performance presented to them. They may become unaware even of each other as all of their attention belongs to the stage. To the

performers or orators on stage, the audience becomes a collective— their attention and reactions to the performance are unified. They are a collective, sharing like minds and behaving as one.

When the audience notices the technicalities of the performance— for example, an orator stuttering over his words, or a technical glitch on stage— the performance suffers. The audience’s entire focus is no longer on the content. They are aware of each other, looking at the people next to them to see if anyone else noticed it. The mistake or technicality may even overshadow the point trying to be made, completely undermining the point or purpose behind the performance.

This entire experience translates to literacy and print, and by extension, to technology and user experience. Technology allows for a mode of performance—it acts on the user’s behalf, performing certain acts and employing different visual rhetoric according to the target audience. Like in theater and other forms of orality, the most successful digital performances are when the user experience is seamless and unnoticeable to the audience— in Knowledge Journey, for example, the main focus is supposed to be on the “treasure hunt” aspect of the experience, while for Netflix, the user is supposed to be as immersed in the content as possible. Using the interface should appear to be a natural thing, free of technical glitches and errors and sparing the user any frustration. Even in cases of technical difficulties, user experience designers take measures to avoid or curb user frustration, as seen with Google Chrome’s simple infinite runner game that appears when the web browser loses internet connection—the feature was put there intentionally, designed to quell any anxieties or frustrations the user might experience over the lack of connection and keep them occupied until the connection returns.

Common rhetoric around technologies like these— especially sites like social media— regard how mindless users are when using these websites. That is the goal of these designs, just

like how some books are meant to be mindless entertainment and how theater and film are designed to be immersive and captivating. Like with books, theater, and film, technological interfaces are deserving of critical study; everything in these interfaces is put there intentionally, with specific audiences and purposes in mind. We should study how exactly these interfaces are structured, why they are designed the way they are and how we internalize them, just like we have previously internalized oral and written languages. The language is different— user experience tends to employ multimedia elements and be more visual than textual— but the same principles of rhetoric still apply.

Chapter II: User as Reader

Although users possess traits of an audience-member and are part of a larger collective, the word “audience” does not entirely encompass the user’s experience with a digital interface. The word “audience” stems back to oral culture—the latin “audientia” means act of listening, attention, body of listeners” (audience, n.). Although the word “audience” has been appropriated to suit other expressive modes, especially in an increasingly literate world, the word is still very much tied to orality in a way that contemporary digital interface users aren’t. Performance is inherently oratorical—the audience listens to the spoken words and tone of an orator, or the dialogue between actors on stage, while watching their gestures and actions live on stage, to understand the meaning of what they are watching. Everything on the stage happens in real time—if an audience member loses track of the play or doesn’t understand a part of the dialogue, there is no rewinding or going back to watch certain parts. There is an impermanent quality and transience to the performance, and to oration in general—as Walter Ong put it, “oral tradition has no...residue or deposit [like written words do]...when an often-told oral story is not actually being told, all that exists of it is the potential in certain human beings to tell it” (Ong 11, *Orality and Literacy*). The words only exist in the moment that they are spoken—they are spoken once, and then are gone. To record them would be to strip away their oral nature.

User interfaces have a more permanent “residue or deposit” that “can neutralize time” and “conquer...space” by moving information” and language “to its recipient over distances that sound cannot traverse,” much like writing does; this “residue or deposit” is what users “read” and interpret in order to understand what the user interface is communicating to them (Ong 10, “The Writer’s Audience is Always a Fiction”). Everything on a user interface leaves “residue” that withstands time and space in a way that primary orality does not: they are documented and

preserved on the internet to be returned to later on for as many times as the user desires, from any device that can access that interface. Even shows that air live, like *Game of Thrones*, are recorded and put up on the internet indefinitely for viewers to watch in their own time or to return to after they watch the premier— like a reader does with a text, a user can continuously return to the content of a user interface, analyze it, and think it over in a way that is impossible for a traditional audience in a primary oral culture, where a performance only happens once and cannot be returned to.

A user's experience with an interface is also more individualized than an audience's experience with a performance; while an audience-member shares their experience with the other members of that audience, a user's engagement with the interface is a solitary activity that they actively shape for themselves. User's engage with the interface alone, unable to have a collective response or reaction to the interface with other users as an audience-member would in a live performance. A user's response to the interface is not influenced by the physical responses and reactions of other users: while an audience-member might be compelled to clap because the people around them are clapping, a user does not feel the same pressure to respond the same way as other user's because they are not physically and temporally around other users— they engage with the interface alone, much like a reader reads a text by themselves. In addition to this, because user interfaces have “residue or deposit” that can be returned to, user's can shape their own experiences with the user interface in how they return to the interface's “residue—” if they are returning to an episode of a show they have already seen, for example, they can skip scenes they might not like, rewatch moments that they didn't understand the first time they watched it and return to their favorite scenes with a new perspective, much like how a reader would reread a text. A user's engagement with the interface is not part of a collective experience the way an

audience's experience with a live performance is; rather, it is an individualized, solitary experience resembling that of a reader's experience with a text.

The Plural Abstraction of Readers and Users

Because user experience is a “secondary orality” not defined or contained by time and space, users are not a traditional audience: they are “simply further away, in time and space, or both” from the original performance and from each other (Ong 10, “The Writer's Audience is Always a Fiction”). Users moreso resemble a “readership” than an audience— in his essay “A Writer's Audience is Always a Fiction,” Ong draws a distinction between audience and readership, explaining:

The orator has before him an audience which is a true audience, a collectivity. "Audience" is a collective noun. There is no such collective noun for readers, nor, so far as I am able to puzzle out, can there be. "Readers" is a plural. Readers do not form a collectivity, acting here and now on one another and on the speaker as members of an audience do. We can devise a singularized concept for them, it is true, such as "readership." We can say that the Reader's Digest has a readership of I don't know how many millions- more than it is comfortable to think about, at any rate. But "readership" is not a collective noun. It is an abstraction in a way that "audience" is not.
(Ong 11, “A Writer's Audience is Always a Fiction”).

Users, like readers, are not a “collectivity, acting here and now” on each other and the performers because they are distanced in time and space from the actual act of creating the medium; rather, they are a “plural,” consisting of multiple singular users looking at and using the same interface in different spaces and times. For this reason, Ong calls the concept of “readership” an abstraction, since unlike an audience, readers rarely gather together to read a text. Instead, they are separated both from each other and from the act of creation— a “readership” doesn't see the writer in the act of writing as an audience would see actors or orators performing or speaking live. Readers only see the final product; they have no insight into the process of creating the text by just looking at the text.

A writer's relationship and limited interaction with their readers also show how a "readership" is a plural abstraction: although writers can guess or predict who their "readership" might consist of, they don't know who specifically and how many individual readers there are. They don't see their readership the same way performers in a live performance see their audience; instead, their interactions with their readers are through other forms of communication and media—such as book reviews, emails, letters and events—and operate through delayed time and space. Interactions between writers and readers are premeditated, and have no influence or power over the original stagnant and unchanging text. Writers and readers do not interact with their readers in real time and space as a presenter does, but through the medium of the text in different times, spaces and contexts.

The relationship between a writer and their readership is similar to that between User Experience Designers and their users. The UX Designer can only really predict who their users are based on who they intend the interface to be for and the data they have at hand— as seen in Geoffrey Sauer's assessment of EServer.org's users, Sauer looked at and understood Eserver.org's users through numbers, statistics and bar graphs, associating changes in that data with changes he made to the website's user interface (Sauer 368-369). Each user is a separate, single point of data that adds together to make a bigger picture of website activity. Users, to UX designers, are not a collective but a plural abstraction— the designer does not see them or respond to their behavior in real time, but understands them through data collected over a large span of time. Users are also distanced from the process of designing the interface, as well as the technical layers of code that lie beneath the expressive "front" of the interface; instead, they only see the final draft or end product that the designer chooses to show them, just like how a reader would normally only see the final, published version of a book (Goffman 22). This holds true for

any kind of user interface, ranging from streaming services such as Netflix and HBO, where shows like *Game of Thrones* are pre-recorded and heavily edited before airing, to search engines like Google and BKS that present search results in a clean organized way without showing the work the computer has done to find those results in a matter of seconds. Users experience the polished, most up-to-date version of the interface, just as readers read the final, error-free draft of a novel or short story— their say in the creative process is limited to their responses to the end result or product.

The “Text” of UX

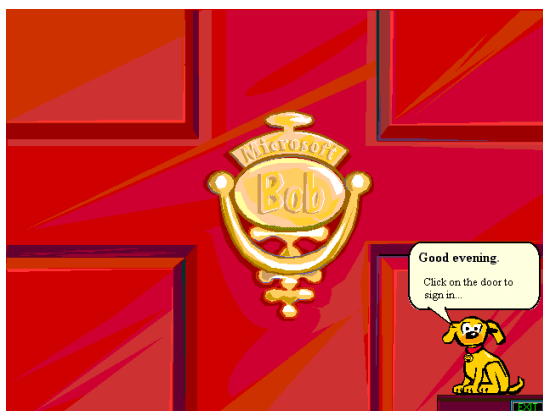
Because users behave like and are ultimately readers of user interfaces, user interfaces are ultimately “texts:” they are bodies of symbols, signs, and information that the user interprets and uses to fulfill their intellectual needs or desires. Just like how different books fulfill different purposes for their readers, user interfaces are designed to be used in different ways, ranging from entertainment to research, from communicating with other people to doing independent work.

Between everyday written communication in the office or at school, advertisements, and political messages, the type of typeface and font used influences the overall message or content being delivered. Typeface is both the medium and the message; it has “personal and social consequences” on its own, without the influence of the content it is delivering. The medium has a message of its own and is its own “language articulation,”— it is divided into a “chain of meanings” with its own “meaningful units” for the reader to interpret (Saussure 12). A message is not limited to the meaning of content but extends to the way in which content is presented and delivered. This holds true for both typography in traditional “text” like books and papers, but also for the typography and other media seen in user interfaces; the way a user interface presents information— whether that is through text or other visual elements— is a message in itself.

Even in a text, the presentation and form of the words and sentences influence the overall message the writer is trying to express. The font, size and color of the text can add an additional layer of meaning to the actual words, phrases and sentences:

I will never, ever take Comic Sans seriously, even if TS Eliot wrote in this font.	Times New Roman is a neat, professional looking font appropriate for academic papers.
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On the left is the Comic Sans typeface from the *Microsoft Office Suite*, and on the right is the Times New Roman typeface, the font typically used in academic papers. Comic Sans is a sans serif font, or a font that does not have small lines or strokes tapering off from the larger strokes of the letter. It was originally designed in 1995 for *Microsoft Bob* (a program similar to the modern-day Siri designed to help children learn how to use computers) by typographer Vincent Connaire, who noticed a conceptual disconnection between the use of the more formal Times New Roman font and the dog that was meant to guide young users through using a computer (Beaumont-Thomas):



(The Paris Review)

Connaire believed that *Times New Roman* was too formal and “made no sense” to use for the context of a friendly character such as a dog (Beaumont-Thomas). Inspired by the handwriting found in speech bubbles from comic books and graphic novels, Connaire designed a typeface that was meant to be informal, friendly, “very casual, very welcoming” to “novice computer users” like children, who were in the process of learning how to read as well as learning to use a computer (Beaumont-Thomas). Although *Comic Sans* ultimately was not used for *Microsoft Bob*, it gained notoriety as the default font for *Microsoft Publisher*, where adult professionals inadvertently misused it for office and professional purposes by not changing the font of their documents; it made professional messages look unprofessional and sloppy, as if they were “showing up for a black tie event in a clown costume” (Combs). As a result, *Comic Sans*, a font designed for children, became an extremely divisive typeface through its misuse by adults in professional environments such as the workplace because it’s informal, casual appearance did not reflect the tone of a more formal, professional environment and context.

Times New Roman, on the other hand, is an easily-readable serif font historically known for its professional and academic applications. Designed in 1932 by typographer Stanley Morrison for *The Times* newspaper in London, Times New Roman is a typeface that was “English, direct, simple and free from frivolity” (The Times). The font’s success lasted: in 2016, *The Independent* reported that *Times New Roman* was “the world’s go-to font for official looking documents” and the “most-trusted typeface among the UK public,” known for its use in academic publications (Hooton). Although *Times New Roman* was originally exclusive to newspapers, it was later adopted and altered to suit different formats such as the longer lines found in books and digital publications (Mann). *Times New Roman*, between its easy readability

and historical and contextual association with the publishing industry and academia, is still seen and respected as a professional typeface almost 90 years after its creation.

The distinction in typography, however, goes beyond the binaries of whether it looks professional or not, is designed for adults or children, or if it's serif or sans serif: fonts and typeface can also deliver more nuanced, subtle meanings and presentation of content and information, such as feeding into larger and more complex societal distinctions like racial stereotypes and political bipartisanship. In a 2009 article in *Print Magazine*, design historian and visual arts professor Paul Shaw highlights the long-running, problematic use of “oriental” or “quasi-ethnic font” frequently seen in contemporary advertisements for Asian restaurants. These typefaces—which can be traced back to the 1860s, when Chinese immigrants began to arrive in the US in large numbers— wrongly resemble Asian writing systems “in context rather than [in] innate characteristics.” Instead of using actual brush strokes, as seen in Chinese and Japanese writing systems, these fonts emulate brush strokes using Western pen conventions, creating sharp shapes that have “generic exotic [and] non-Western aesthetic” (Shaw; Yang). These kinds of typefaces are not made for practical purposes, like Comic Sans and Times New Roman; rather they were designed to communicate and enforce harmful stereotypes and misconceptions about an immigrant minority. Typefaces such as the ones Shaw and Yang note more so mock other cultures, languages and writing systems, delivering a message that helps fuel racial stereotypes.

Typeface can also have bipartisan political connotations, as seen in a recent study of typeface in US political ads. The study, inspired by Professor Katherine's Haeschen observation that the same political candidate was using different fonts and typeface in his political ads in different regions of Virginia, found that fonts and typefaces are often associated with different political leanings, depending on their size, dimensions and whether they are serif or sans serif:



(Kauer)


The study found that Americans actively associate different fonts and typeface with different political ideologies and candidates: sans serif fonts are often seen in advertisements for more US Democratic candidates and are perceived to be more liberal, while serif fonts are often tied to Republicanism and conservatism. In order to appeal to different demographics and grow their number of voters, campaigns tailor the “visual identity” and image of their ads for different regions and audiences, using serif font in more rural, politically conservative regions and sans serif in more urban, politically liberal areas. A person’s preference of font or typeface is often influenced by their own personal ideologies— the more they perceive a font to reflect their own values and beliefs, the more likely they are to prefer it (Virginia Tech). While an individual can obviously read the ad no matter the typeface it's written in, how that ad is presented to them influences their perception of the candidate and campaign in question. Typeface, though delivering a greater message, is definitely influential in a candidate’s visual presentation and appeal.

The difference in a text and a user interface lies only in the use of semantics and in the way they relay meaning and information; despite the physical differences in appearance, both texts and user interfaces are modes of “language articulation,” or “the division of the chain of

meanings into meaningful units” (Saussure 12). The information and content each contains are organized into “meaningful units” that best express the idea for the medium— for a text, these “meaningful units” are “the structure formed by words in their order” or “the very words, phrases and sentences as written.” The writers of texts articulate what they mean and want to express through the order of written words, phrases and sentences—a classic example of this would be the meaning of “let’s eat grandma” compared to “let’s eat, grandma,” where a comma completely alters the collective meaning of the sentence. User experience and interface designers, though they also use text on their interfaces, employ a combination of elements to convey meaning, such as symbols, images, colors, typography and other visual keys for the user to derive meaning from. While a text might rely more on the words in relation to each other to relay meaning, a user interface will express meaning through how those words— and other visual symbols— appear in design and in relation to each other.

Beyond Words: The Different Kinds of Signs

In user experience design, or any other form of digital medium, the logic of “medium is the message” extends beyond typography— any symbol on an interface is there intentionally and is part of its own “chain of meanings” (McLuhan 1; Saussure 12). Meaning and information is not just derived from written and spoken “content”— it can be derived from symbols, icons and indexes that provide important information without spelling it out. While typography stands as an intersection between traditional text and user experience design, it is just one of many kinds of visual signs employed by UX designers to effectively deliver the intended information and content. User interfaces contain a plethora of multimedia elements to create a cohesive and smooth user experience.

In “Logic as Semiotic: The Theory of Signs,” Charles S. Pierce breaks down different kinds of semiotic signs into three categories, depending on the way in which the sign indicates meaning and delivers information (Pierce 102-103). The first category is icons, which is the most direct sign of the three; they are visual representations of the object or idea being referred to and physically resemble the object through shared characteristics. This , for example, stands for a rabbit because it looks like the actual animal—it means exactly what it looks like. The second category, indexes, are signs with some implied connection between the sign itself and what it is signifying, where the sign is often seen as a consequence of the object it represents. A common example of this is smoke, which represents and indicates the presence of a fire. The third category is symbols, or arbitrary representations of an object. Symbols have no physical resemblance to the object or idea that is being represented; instead they are learned signs that the reader only knows it by “virtue of a law” or through cultural associations (Pierce 102). Any letter of the alphabet is a symbol; they are arbitrary signs assigned to a specific set of sounds. By extension, the same applies to written words—the word “cat” bears no resemblance to the actual animal, but any literate English speaker would understand what it means because the word is assigned to make up the sound we call the animal.

UX designers commonly employ all three of these signs in their user interfaces, manipulating their use and meaning according to the context and goal of the design; they trust their users to be able to read, interpret and understand what is being communicated to them. However, although some signs can be considered “powerful form[s] of communication because they have the potential of being universally meaningful,” there is always room for misinterpretation (Rogers 106). Icons and indexes can be ambiguous and interchangeable, and can be read in different ways: for example, a sign visually representing smoke could be

signifying a fire or actual smoke, depending on the context and the designer's intention. Inspired by fixing the problem of icon ambiguity and misinterpretation, Yvonne Rogers, a professor of Interaction Design and director of the Interaction Centre at University College London, breaks icons further down into four different categories:

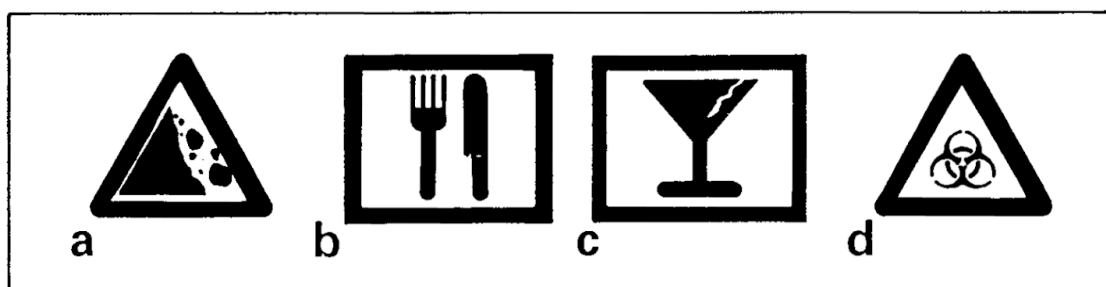


Figure 2. Different forms that icons can take: (a) resemblance, (b) exemplar, (c) symbolic and (d) arbitrary

(Rogers 110)

The first are resemblance icons, which depict the underlying referent or concept with an analogous image. It is the most direct of the icons, where the designer trusts the user to interpret the icon literally and read it at face value. The example of a resemblance icon shown above is a road sign warning of falling rocks, an image resembling that situation or concept. Exemplar icons act as an “example for a general class of objects,” like the sign with a knife and fork indicating restaurant services (Rogers 110). In order to understand an exemplar sign, the reader must not literally interpret whatever is depicted (the knife and fork), but see it as an example or indirect representation of the service that the depiction is indicating (restaurant services). Symbolic icons are used to show a higher level of abstraction, calling for the reader to tap into their own experiences and understanding of abstract or immaterial concepts in order to understand the sign. Image c), for example, depicts the idea of fragility with the image of a “fragile,” chipped glass, warning of the consequences of mishandling something fragile—the designer of the sign trusts that the reader knows that glass is a fragile material and would

interpret the sign accordingly (Rogers 110). The fourth type of icon, arbitrary icons, have arbitrary meanings that the reader or user needs to have learned in order to understand it such as a biohazard sign; because the correlation of what is depicted and the meaning of the sign is arbitrary, there is no way for a reader who has not learned the sign to infer or figure out what it means (Rogers 110). Rogers categorizes each icon based on how the icon's form complements the function, and how the user reads them and understands their meaning in different contexts and situations. Icons and other visual signs are ultimately extensions of the written word: like single words, icons do not make complete sense on their own, but easily make sense when they are placed in a greater context and juxtaposed with other icons and meanings.

Like how single words are embedded into a larger narrative in a text, icons are embedded into larger “interface metaphor,” where users understand the icons’ meanings in how they play into the language typically used in the context of the interface (Rogers 111). The meanings of each icon can be derived from “the level of mapping between the [icon’s] physical form and function” or “the extent to which the link between what is being depicted and the underlying referent can be inferred” (Rogers 110).

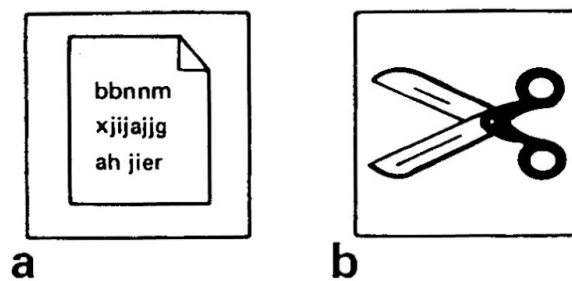


Figure 3. Examples of different types of icon mappings: (a) file (isomorphic), and (b) to cut (physical analogy)

(Rogers 111)

Users read and understand icons in the context of the overall interface metaphor, just like how readers read and interpret words in how they fit into an overall text or narrative. An icon of a file, as seen in the previous image, is a “direct mapping:” characterized by objects, operations and language found in the office such as “filing,” the image of the file is aligned with what it is actually representing, forming an isomorphic relationship between the icon’s form and function (Rogers 111). Other times, the mapping is less direct; the users are required to read into the meaning and use outside knowledge to derive meaning. The icon depicting scissors taps into the user’s outside knowledge of the function of scissors, which would be to cut. It creates an analogy between the function of the icon and the function of physical scissors, that operates within the greater “interface metaphor:” a computer’s file or document can be “cut” by the function indicated by the scissors icon, just like a physical file or document can be cut by a pair of scissors. Users read icons like how readers read words: icons derive their meaning from both the context in which they are placed on the user interface and the user taps into their already established knowledge of the context and the “interface metaphor” to read and use the icons presented to them.

Reading Color— Maps and Apps

While the visual signs of a user interface convey meaning directly and more tangibly in how they resemble physical objects, designers employ other visual elements to convey more abstract or context-based information to which an icon, symbol or index would not do justice. Color, just like icons, are also an extension of written language— they play a great role in coding and categorizing different types of information, especially on a dynamic user interface. Not only are specific colors and color combinations visually appealing (which is important for aesthetic purposes and keeping the user’s attention), color can be “classified... [into] “verbal and

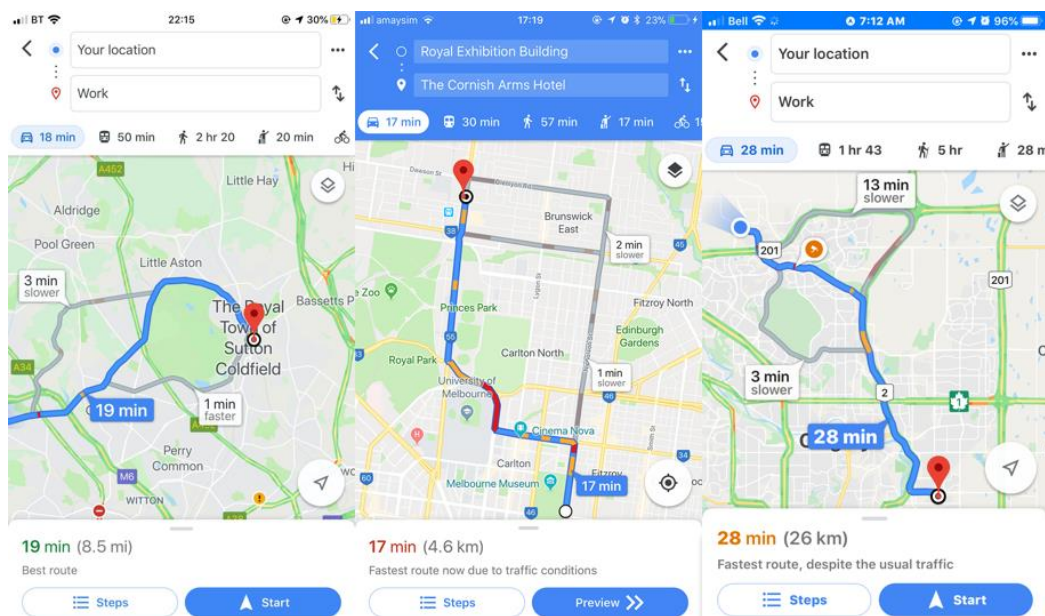
nonverbal semantic categories,” communicating different types and “levels of abstraction,” such as “specific concepts, moods and styles” that other visual signs might not be able to communicate or portray in a specific context (Jahanian et al. 1-2).

A color’s meaning comes from a large array of factors, including where they are typically seen in the natural world, their structure (such as their wavelength and how bright or dull they are), their historical and societal associations, as well as many others. While colors can have universal meaning, those meanings can be appropriated and adjusted based on the contexts in which they are used and how they are placed in relation to other colors and visual signs. A color’s meaning also does not have to be confined to universal meanings, and can have multiple meanings—the color red, for example, can represent love and passion, but also violence and danger. How a user interprets and reads specific colors depends on their greater understanding and experience with that color, as well as how the color is used in relation to the rest of the digital interface and plays into the “interface metaphor.”

A color schema that has been appropriated and adjusted to take on different meanings in different contexts would be the red-yellow-green color combination, where each color has a generic universal meaning that is tweaked to suit different situations and contexts. Red, the color with the longest wavelength, can be seen from much further distances than the other colors. Because of this, it is typically used to communicate a warning from a distance—it is noticeable, stands out from other surrounding colors, and demands attention (Mulholland). The color red was often seen on train tracks as a signal for the train to stop, a concept that translated over to cars later on (Miller). The color orange, though also cautionary, indicates more “transient warnings” where the warning or caution is important, but not as severe as red (Mulholland). Orange in UX is typically used for one of two purposes: immediate instructions or a waiting

period. In his article, “The Traffic Lights Of UX: Staying Smart With Color,” Ben Mulholland emphasizes and cites specific examples of orange being used to indicate both immediate instructions or a waiting period, such as “unsaved changes” warnings or “pending” updates statuses. He compares the use of the color in UX to that of a yellow traffic light, which gives cars the immediate instruction to slow down and wait until it is safe to continue. The color green, contrary to red and orange, is not a warning color; rather, it is a positive, affirmative color that usually indicates approval for action or the completion of a task (Mulholland). Green is the visual and representative opposite color of the harsh warning red; it represents and encourages positive progress while red indicates that something is wrong and warns the user to stop. All three of these colors have a universal meaning that is broad and abstract enough that they can easily be appropriated to fit in different kinds of user interfaces (Rogers 111).

Web mapping user interfaces such as *Waze* and *Google Maps* use variants of the red-orange-green color schema to communicate important traffic information in a quick and efficient way while making sure that the user’s full attention is on driving:



(“Screenshots of Google Maps”)

The *Google Maps* iPhone App’s user interface purposefully uses the red-orange-blue and red-orange-green color combinations that drivers are already familiar with to indicate the amount of traffic and time between the user’s current location and desired destination. The parts of the route that are blue have little to no traffic. The orange parts have some slow-downs. Red parts of the route have heavy traffic and slow-downs. The estimated travel time follows the same logic, with just a slight variation for indicating light traffic— instead of blue, the text is green. The different colors representing the status of traffic in the app reflect that of a traffic light: a red light is associated with stopped cars and heavy traffic, yellow for slow traffic, and green (or blue in some parts of the world) to indicate minimal traffic. Because the interface employs color semantics that align with the universal meanings of these colors, users of the app have no need to relearn the meanings of an entirely new color schema; they are already familiar with reading and understanding the colors that Google Maps presents to them, transforming the user experience on Google Maps into a seamless extension of the driving experience.

Not only are single colors extensions of written language, so are color combinations and schemas, where colors are meant to be read together. Each of the traffic-light colors derive meaning from how they are used in relation to one another. The color green, for example, does not automatically mean “go;” it only means “go” when it is juxtaposed with red and orange. Different color combinations have their own meaning and are read differently according to the context and intended use. The red-orange-green color combination serves as an example of a qualitative color schema— one of the three schemas outlined in the article “The use of colors in maps” from Morphocode, an architectural firm that designs digital maps:

DISCRETE CLASSES
Qualitative



SCALAR VALUES
Sequential



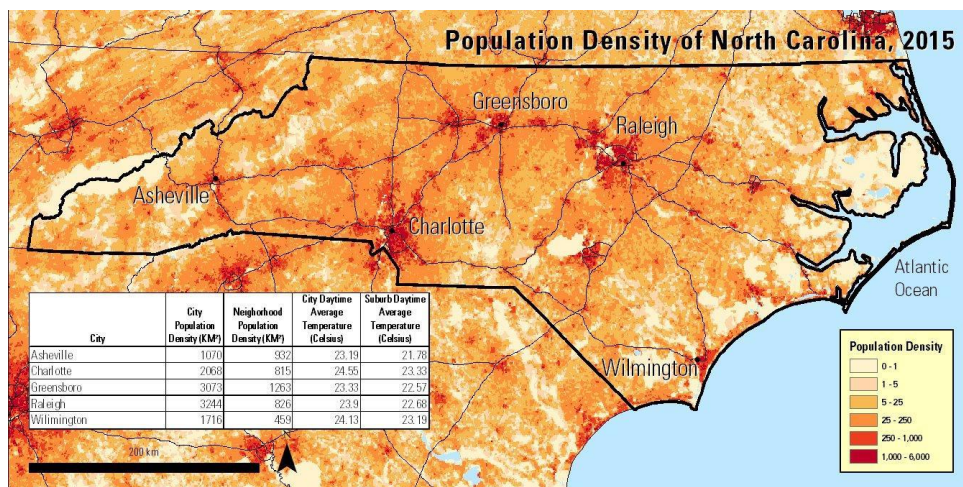
CRITICAL BREAK
Diverging



(Morphocode)

Qualitative color schemas are sets of colors that are usually applied to discrete classes of information—they consist of different colors that have little resemblance to each other: and are often used for nominal data, such as race or ethnicity (Morphocode). The different colors represent different categories that fall under the same umbrella, but are ultimately separate in description.

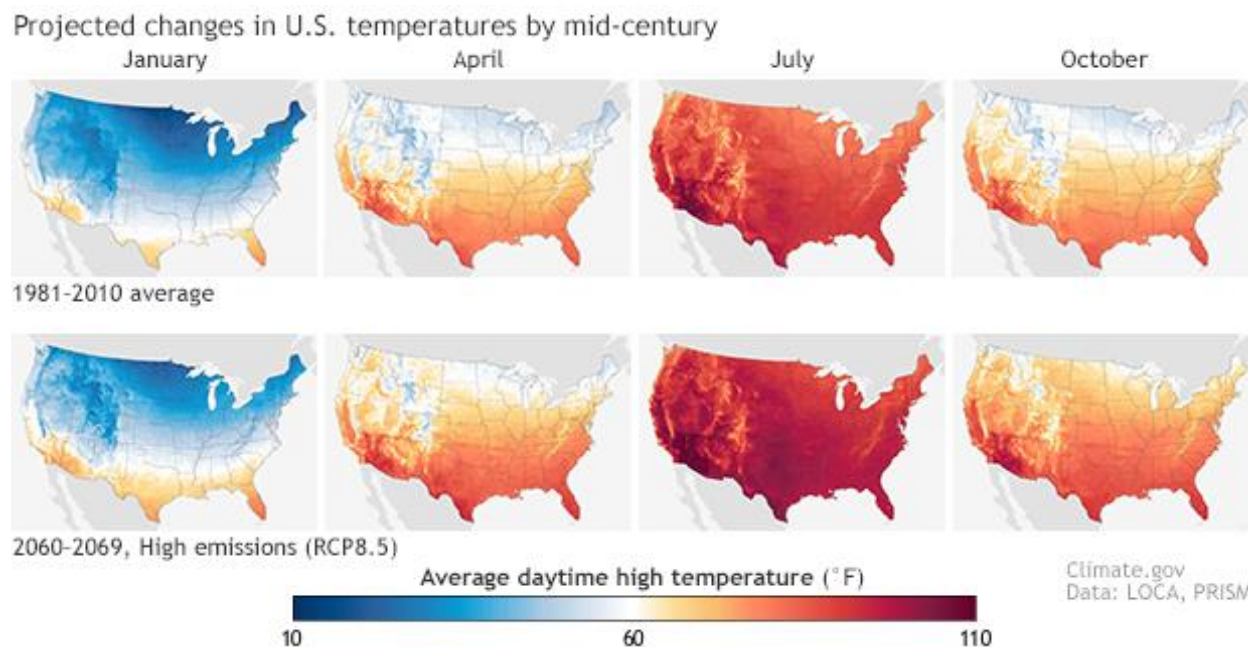
An additional kind of color scheme would be a sequential scheme, which is often applied to numerical data, such as population density:.



(“Population Density Map of North Carolina, 2015”)

In sequential schemes, how light or dark a color is correlates with the numerical data it represents, with the lighter colors usually signifying lower values and the darker colors signifying higher values. This scheme typically comes with a key possessing quantitative data for the reader to refer to and use to read and interpret the colors they are looking at—the key in the map above indicates the ranges of population density each shade represents. Changes in lightness or darkness indicates changes in the map’s numerical data—in the case of the population density map, dark red represents areas with high population density, with lighter reds and oranges represent areas with lower population densities (Morphocode).

Diverging color schemes are made up of two different sequential schemes, where one scheme represents positive numerical values while the other stands for negative numerical values:



(“Projected changes in US temperatures by mid-century”)

The two sequential schemes diverge from a critical break or neutral color that represents a neutral point of data, making this scheme efficient to visually depict data with positive and

negative numerical values, such as temperature or elevation (Morphocode). In the temperature map of the US, the neutral point of data— 60° F—is a neutral white color that merges two opposite sequential schemes—a red scheme representing hot temperatures and a blue one representing cold temperatures. The choices of color used in this map tap into the reader or user’s outside knowledge and understanding of these colors: red is typically correlated with heat and summer, while blue is often associated with cold temperatures and winter. Context also informs how the reader should understand this map— if they did not know that the different colors were referring to temperature, this map could be interpreted as a political map, for example, with darker red representing areas of conservatism and Republicanism and blue areas representing places that are more liberal or Democratic. Context is key in understanding and reading color, just like it is for reading icons and written texts— as the temperature map demonstrates, readers only correctly interpret words, signs and color when they fully understand the context in which these visual signs are placed.

The user’s understanding of any of these colors in any of these schemes depends on how they understand the schemes as a whole. Like with icons, the context guides the interpretation—the color red on *Google Maps* means something entirely different than the color red in a graph depicting temperature or the red markings on a graded paper. A color’s relationship with other colors also feeds into that color’s meaning: in a sequential color scheme, the color depicting the population density of New York City makes a lot more sense to the map-reader when it is read in relation to the color depicting Gander, Newfoundland’s population density.

Reading colors and other visual signs is an extension of reading the written word. The way a *Google Maps* user “reads” the colors bears great similarity to what Wolfgang Iser calls the

reader's "aesthetic response:" the reader interprets specific pieces of text a certain way because the text and narrative guides or puts them in the position to interpret it that way:

...the reader is situated in such a position that he can assemble the meaning toward which the perspectives of the text have guided him. But since this meaning is neither a given external reality nor a copy of an intended reader's own world, it is something that has to be ideated by the mind of the reader. A reality that has no existence of its own can only come into being by way of ideation, and so the structure of the text sets off a sequence of mental images which lead to the text translating itself into the reader's consciousness. The actual content of these mental images will be colored by the reader's existing stock of experience, which acts as a referential background against which the unfamiliar can be conceived and processed.

(Iser 38)

A text's meaning is neither a completely objective "given external reality" nor is it a completely subjective "copy of an intended reader's own world—" its meaning is "something ideated by the mind of the reader," informed and colored by "the reader's existing stock of experience, which acts as a referential background" as the reader explores ideas and concepts that might seem "unfamiliar." For example, a reader of a text might tap into their knowledge of etymologies to parse out the meaning of an unfamiliar word— they use their "existing stock of experience" to make out and understand new ideas and concepts. The same idea applies to visual signs— interpretations of their meanings are derived from the reader or user's previous experience with other signs or the contexts in which they exist. Their meanings do not exist on their own— they are something that the context guides the user or reader towards. Just like how the meaning of a single word does not exist in a silo, the meaning of another kind of visual sign does not exist on its own. Visual signs' meanings, like the rest of language (written or oral), are dependent on their relationships with other signs and the context in which they exist.

Conclusion

Texts as we traditionally understand them are ultimately a combination of symbols, arranged in a way that is unique from other texts and makes sense to the reader. The same holds

true for user interfaces— they are bodies with different visual signs arranged in a way that makes sense for the context and message of the user interface. The signs look different: text tends to use arbitrary letters assigned to sounds, while the signs on a digital user interface are a combination of symbols (including words), icons and indexes that don't necessarily reflect sound, but still have meaning relevant to the user and the user experience. Information is still being communicated, just in a different mode— like how different typefaces are read differently from each other, different visual signs are read differently. The user, like a reader, interprets and understands the signs the same way as a reader interprets and understands words.

Users are ultimately readers. Their “text” is the interface. The language they read are the icons that appear on the screen. They interpret signs the same way a reader processes words. The difference between reader and user lies in the medium through which these signs are displayed, and how the reader or user interacts with them. When a reader reads a text, the extent of their interaction with the text might be limited to underlining it or marking it up in another way, or responding to it through their own writing. The signs on a user interface encourage interactivity— they are there not just for the user to read, but for them to interact with, whether that be through clicking, mouse-overs, scrolling or typing. The visual signs seen on computers, though also read like traditional text, are not stagnant and unchanging— they stand somewhere between the stagnant, unchanging words of a traditional text and the constantly-changing spoken words of orality, leaving residue but also leaving room for audience interaction. The signs of a user interface are meant to be read, but also acted upon.

Chapter III: User as Actor

While comparing users to readers provides insight into how users interpret what they see on an interface and how engaging with a digital interface tends to be a solitary activity, this comparison does not entirely encompass the reader's behavior and characteristics. Even though users engage an interface in a way that resembles how a traditional reader reads a text, the user does more than just “read” and “interpret” the interface. Readers read and interpret signs within a specific context to derive greater meaning—they internalize the meaning, consciously or unconsciously, to inform prospective actions or thoughts. This process happens almost entirely within the head of the reader—it is a mental and intellectual action. Unlike with an audience where the presenter or orator can gauge their reactions and shape their performance accordingly, the writer cannot see the reader's reaction and respond in real-time—the reader's physical engagement and response to the text is limited to small physical actions (like marking a page with a bookmark or writing in the margins) that the writer cannot see and respond to in real-time. The reader's physical actions do not and cannot change the stagnant, unchanging text—they can only emphasize what exactly the reader chooses, creating an individualized experience for himself by adding another layer of meaning without changing the foundations of the original text.

Even though a user also reads and interprets the information on the digital interface, their engagement and responses to the interface are of a different nature than a reader's response and engagement with a text. The user is not meant to just “read” and internalize what they see on the screen but to act with and respond to it through actions. A digital interface is inherently interactive—while a traditional text is stagnant and unchanging, a user interface is fluid and constantly changing due to the user's interaction with it. The user's engagement with the

interface is external; in order to properly engage with the interface, the user needs to perform physical actions—such as clicking or scrolling—to engage with the interface. The computer then responds to these actions, going back and forth with the user and shaping the digital interface the user sees accordingly. Users are active participants and creators in their user experience— they help the computer shape the interface, creating a digital interface experience that is unique to them, and informing other digital user interface experiences for future users.

While the previous two chapters have extensively explored user experience and user interface design, this chapter will focus more on the greater field of Human-Computer Interaction (HCI) or the studies of “how human beings interact with and use” computers (Pratt 14)— it will focus on the user’s actions and the computer’s actions to complete a task, details that shape how a user interface should be designed. As the structure of the name “Human-Computer Interaction” suggests, both the computer and human are codependent on each other to complete the task at hand— they are both actors, or “members in the interaction pairing or group who [are] perceived as being able to act independently of the other party(ies), regardless whether their behavior is minded, sustained, or meaningful in a conventional sense” (Owens 569).

Human-Computer Interaction and Theater

The human and computer both have their own set of independent actions that make the interaction possible— the human clicks on links and engages with the computer through the interface, while the computer responds to the human’s actions and commands through electrical impulses and deciphering the code underneath the interface. In addition, both human and computers are agents in the interaction— agents are actors who “have both voice and power, which together provide many options for meeting goals,” and possess “the ability to direct meaningful, minded, and sustained behavior toward a desired end within the context of the

interaction, regardless of the efficacy of these efforts” (Owens 569). Humans and computers bring meaning and unique abilities to the interaction that the other lacks— humans can have distinctive search topics for example, while computers can scour the internet at incredible speeds to find the information the user requests.

The human and the computer in HCI are also actors in the theatrical sense, as Brenda Lauren explains in her book *Computers as Theatre*. The human and the computer set expectations for the other’s behavior and cast them in a “role” that they must adhere to in order to generate the action. Laurel calls both the human user and the computer characters with “bundles of predispositions and traits, inferred from agent’s patterns of choices” (Laurel 58). Both characters are needed for the action or plot, which Laurel defines as “the whole action as it is collaboratively shaped by designer and interactor,” which “may vary in each interactive session.” The human user is both an audience-member and an actor— they are a part of a large group of people who have a need for the user-interface (or, to continue the theater metaphor, a stage) to look and behave a certain way. They also need the computer behind the interface to act a certain way in order to comfortably and fully act the role the interaction requires it to take on. The same applies to the computer: while the computer contains an infinite number of capabilities, it requires the human-user to help determine which one it should be focusing on. For example, the common computer has the ability to do a search dictionary search, as well as the ability to be a calculator— in order to be one or the other, the computer needs the user to decide whether they want to be a writer or a mathematician for that interaction.

The user interface helps smooth out the communication between the human and the computer by setting the stage for their interaction as well as setting the expectations for each actor or agent. How the stage is set prompts action: if there is a couch on the stage, for

example, its presence prompts the actors or characters to sit. The same logic applies to the user interface; it is set up in a way that prompts the acting user to take a certain course of action. For example, if the user is shopping on Amazon and sees something they would want to buy, the link leading them to the product page prompts them to click on it, as does the “Continue to Check-Out” button, to complete the transaction. The interface also informs the computer what exactly it should be doing. If the user clicks on a picture of a notebook on Amazon, the computer knows to stay on the Amazon website and load the notebook’s product page, as opposed to searching google images of other notebooks. The user interface helps guide the user and the computer into their roles for the interaction, as well as prompts actions from both through its lay-out and design.

Casting the User: From Chaucer to Fictionalized Personas

The idea of a user or actor being called to take a specific course of action, however, is not limited to the stage and user interface—it is also found in literature, especially in early texts that stand at the cusp between primary oral and literate culture. In “The Writer’s Audience Is Always a Fiction,” Walter Ong discusses the “literary-structural point of view” and frame of Chaucer’s *Canterbury Tales*, in which Chaucer “fictionalizes” himself as one of the pilgrims in his story, as well as asks the reader “to imagine himself in [the pilgrims’] company and join the fun...fictionalizing himself as a member of a nonexistent group” (16). Because there was “no established tradition in English” for literature in how the writer should treat the “conjectural reader,” Chaucer chose to immerse the reader in the narratives by casting them as one of the pilgrims, “minimiz[ing] the fiction” and “maximizing real life” (Ong, “The Writer’s Audience” 16). The language and structure of the *Canterbury Tales* informs how the reader should think about themselves— a practice that continues on to the theatrical stage and the user interface.

“Language,” as discussed in Chapter 2, is not limited to the words formed by the roman alphabet, but to any sort of sign that could be interpreted. Language informs and provides insight into “thought,” which Brenda Laurel defines as “inferred internal processes leading to choice: cognition, emotion, and reason” for the stage (Laurel 58). She expands the definition for Human-Computer Interaction to include “processes of both human and computer origin” (Laurel 58). The structure of a medium informs the perceptions and understandings of the user of that medium—for a reader of Chaucer, the structure of the *Canterbury Tales* eases them into thinking and engaging with the text as if they were a pilgrim listening to these tales.

Chaucer’s *Canterbury Tales* serves as one example of the use of masks when engaging with a media—whether that is a text, a dramatic performance or an interface. Ong explains:

Personae, earlier generally thought of as applying to characters in a play or other fiction (dramatis personae), are imputed with full justification to narrators and, since all discourse has roots in narrative, to everyone who uses language...but the masks of the narrator are matched, if not one-for-one, in equally complex fashion by the masks that readers must learn to wear...masks are inevitable in all human communication, even oral. Role playing is both different from actuality and an entry into actuality: play and actuality (the word of “work”) are dialectically related to one another.

(20)

Ong draws a parallel between the roles readers play and the “dramatis personae,” or the characters of a play or piece of fiction, noting that masks appear in “all human communication,” no matter the mode or type of medium used. He views narrative as an interaction; the participants—in this case, the narrator and the reader—wear masks in order to fully participate and immerse themselves in the narratives that are neither entirely fictional nor completely grounded in actuality. The masks of pilgrims the reader and narrator wears is not rooted in their personal realities, but in the historical context through which the *Canterbury Tales* were written, at a time when pilgrimages to Canterbury were common and deeply embedded into English

culture. Chaucer fictionalized this actuality to create the *Canterbury Tales*, asking the reader to join him in this fictionalization of a realistic event.

The use of masks extends beyond text and the stage— as Ong points out, they are “inevitable in all human communication” (Ong, “The Writer’s Audience 20). Erving Goffman, in *The Presentation of Self in Everyday Life*, argues the same in his focus on human-to-human interaction:

It is probably no mere historical accident that the word person, in its first meaning, is a mask. It is rather a recognition of the fact that everyone is always and everywhere, more or less consciously, playing a role... It is in these roles that we know each other; it is in these roles that we know ourselves

(19)

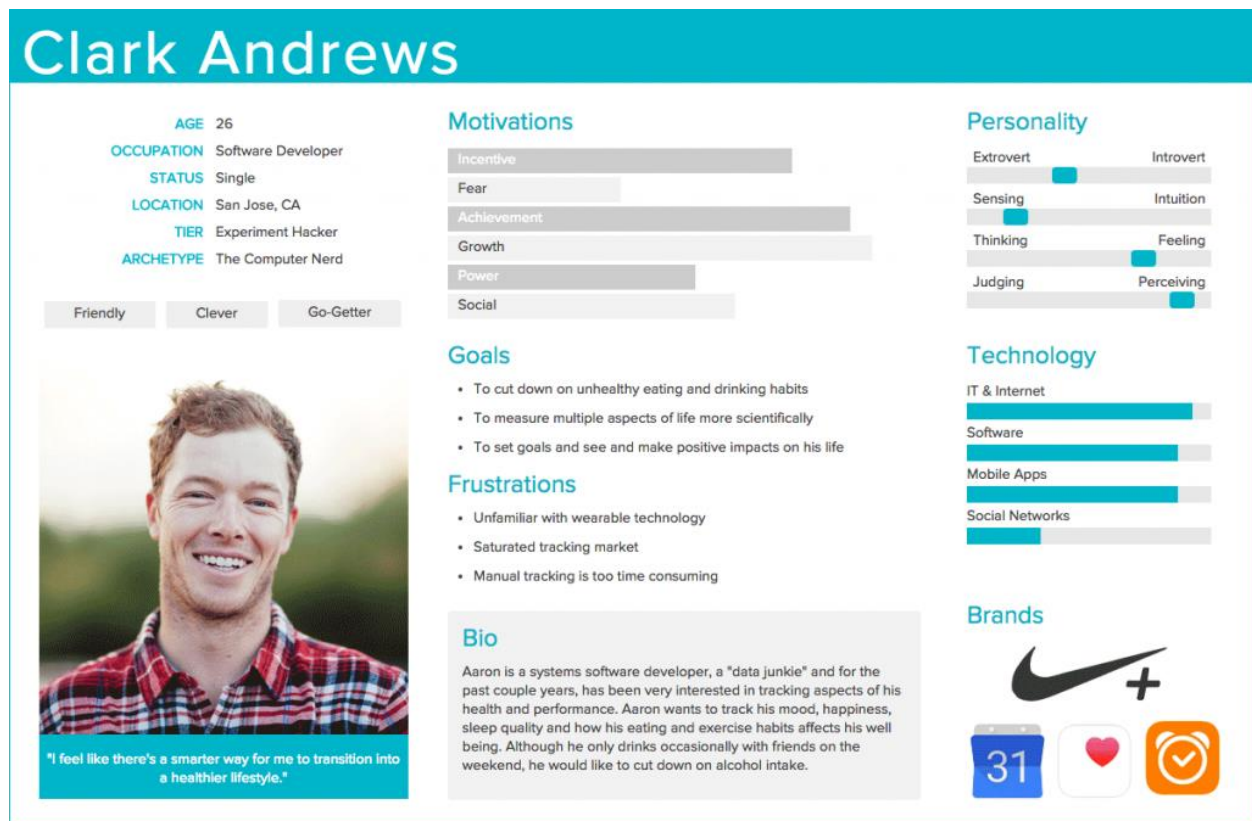
Even in human-to-human interaction, according to Goffman, people wear masks and play a role. This is natural— as Goffman points out, it is not a “historical accident” that the etymon of the word “person” is “mask.” Both Ong and Goffman argue that these roles enable us to know and understand each other, and that it is impossible to remove all masks in any interaction—everyone wears masks “always and everywhere,” regardless of how conscious they are of it. Playing roles and wearing masks are a part of the human experience and organic human interaction— without masks, there is no way to understand each other or the roles we play in the interaction, no matter how hard we try. Ong calls this futile effort “the lover’s plight”— while lovers may try to remove all masks and may succeed in removing most of them, “only...[in] death” will “the last mask [come] off” where “sainthood” and “the vision of God” is “achieved” (Ong 20). Human beings only know each other through the masks that they wear— what a person means to someone else is dependent on the mask or identity they take on while engaging with the other person. A married woman, for example, is a mother to her child, but a wife to her husband, a sister to her brother, and a daughter to her father. The masks a person wears determines who they

are in that interaction as well as the nature of that interaction— to remove all masks would be to completely change what it means to be a person, both etymologically and philosophically.

Personas operate in a similar fashion. The OED defines the word “persona” as “an assumed character or role, esp. one adopted by an author in his or her writing, or by a performer” (persona, n.). While this traditional definition captures the idea of the persona in user experience design, who uses the persona has changed— personas, in user experience design, are “fictitious characters, based on composite archetypes” that “[encapsulate] ‘behavioral data’ gathered from ethnography and empirical analysis of actual users” (Idoughi et al. 288). Personas, Idoughi and his colleagues argue, do not model “‘average’ users,” but “take into account boundary cases as well as specific class of users with special needs;” in other words, they “fictionalize their audience” or user-base in order to create an interface that would appeal to a certain population. (Idoughi et al. 288; Ong 17). Personas are “fictionalized” predictions of who the typical user might be— they have estimated goals and characteristics, such as their familiarity with using a computer, their profession, and what exactly they need the software to do. Personas allow user experience designers to better understand who exactly will be engaging with their software and help them design an interface that allows for a smooth interaction between the user and the computer.

Like characters in a play, personas are “not a list of tasks or duties;” instead, they indicate the presence of a narrative (Goodwin). Personas “describe the flow of someone’s day, as well as their skills, attitudes, environment, and goals—” they call for “answers [to] critical questions that a job description or task list doesn’t,” such as what information the user needs to complete a task, whether they are multi-tasking or not, and what they are using the software for (Goodwin). Personas humanize the user by describing beyond their job description, and force UX designers

and developers to consider variables in the user's work that might not be as easily seen without user research and ethnography:



(Babich)

In his article “Putting Personas to Work in UX Design: What They Are and Why They’re Important” for the Adobe Blog, Nick Babich provides a profile of a fictional user Clark Andrews, who is seeking a way “to track his mood, happiness, sleep quality and how his eating and exercise habits affect his well-being” (Babich). The profile includes important context-specific information, such as his familiarity with technology, brands that he already uses, and his frustrations in working towards his goal. In addition to this, the profile also includes personal information— such as his Myers-Briggs Personality type, his job, a photo and a quote from an actual user that this persona is based on— to make the persona seem more realistic as well as better understand the user as a whole (Babich). This combination of context-specific and

personal details effectively captures the needs, goals and motivations of a larger group of people. They are generic enough that they describe a wide range of people, but niche enough that the software has a specific targeted audience. Clark Andrews' profile does not represent the needs of a specific person, but that of a wide range of people with similar traits and needs that a potential product could serve.

Good personas tend to focus on more qualitative data that humanizes the user and their needs, while bad personas tend to be limited to generic, quantitative data that reduces the user to a number or statistic. Terrell Turner, in his article "Personas for Mobile App Research," provides a comparison between a good and bad persona example:

Bad Persona Example:

Persona A

Female

Age: 25-45

Above average income and education

She can have one car and 1-2 kids

Outgoing and career-oriented, and tend to be right-brain thinkers

Good Persona Example:

Persona B

Experienced manager

Two areas of expertise. They visit often, constantly on a rush

They focus on collecting content to read on the weekends.

Shares social media mostly to Twitter and LinkedIn.

Public image is important

(Turner)

The bad persona example provides generic demographic information that provides no insight into the user's specific needs, goals and wants in relation to the product or service; instead, the designer has a bare outline of a person, with no guidance as to what they may want from their product. The good persona, on the other hand, has information that would be more relevant to a designer, such as the persona's profession, values and expertise. It shows what the persona knows, and what they might want out of their experience with their product and the computer.

Good, strong and effective personas reflect the qualitative needs and wants of the targeted user-audience, and predict what the user will want from their interaction with the computer.

Casting the Computer: Nonbiologic Actors

The other actor in human-computer interaction is the computer—or rather, the program being used on the computer. While the term actor traditionally refers to a person performing in front of an audience, it also can refer to non-biological objects, such as lines of code and software that operate on the stage of the computer or hardware. As Erica Owens defines the term in her article “Nonbiologic Objects as Actors”, actors are “members in the interaction pairing or group who [are] perceived as being able to act independently of the other party(ies), regardless whether their behavior is minded, sustained, or meaningful in a conventional sense” (Owens 569). The OED shares a similar definition for “actor,” defining it as “a thing which or person who performs or takes part in an action; a doer, an agent” (actor, n.). Both definitions hold the idea that actors do not have to be human beings— they can be non-living objects with or without “minded, sustained, or meaningful” behavior that can act on their own while still participating in an interaction with others.

Even though a computer program might not be “minded” or “meaningful” the same way a human actor might be, Owens stresses that the program has independent powers from the human that enable and fulfill the goal of the interaction. The interaction and its outcome is dependent on both human and computer as they shift agency and power and rely on each other to complete different parts of the task:

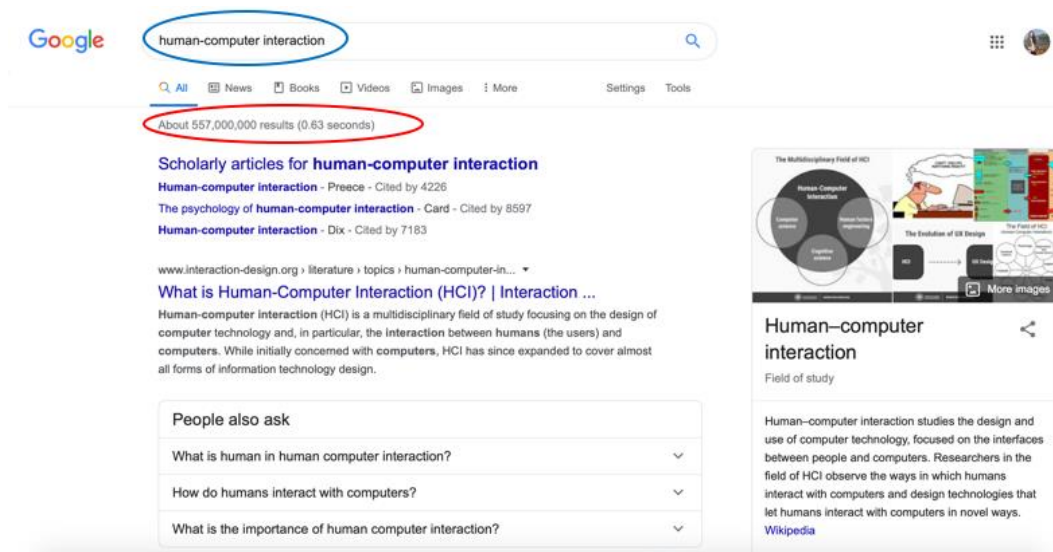
A human working at a computer is not simply a user manipulating a tool. She is a node in a network of agents, as both parties in this scenario contribute to completing a task. In this view, we do not own agency: agency is relocated and becomes a collaborative resource arising from the interplay between human and thing.

(Owens 570)

Human-computer interaction extends beyond the idea of a “user” using a “tool”— it is the transfer of power back and forth between user and computer to complete a task. Both parties are “node[s] in a network of agents,” in which agency moves from one party to the next, depending on each party’s individual capabilities and responsibilities toward completing the task. Agency moves between the user and the computer— the user has agency in their actions, which shifts to the computer for its action. The interaction between human and computer is collaborative; it cannot complete the task at hand without the cooperation of both parties.

Laurel also notes the relocation of agency in human-computer interaction, noting that if not handled properly, agency can become “unclear” and “free-floating.” When it is unclear who the agent is in each moment of the interaction, the quality of the user experience declines, and it feels like one party is picking up the slack or doing the work of the other; for example, if the user has to “set the parameters or specify the details of a desired action in some way, but the form of the transaction is one of supplication rather than cooperation” (Laurel 164). When the user or the computer program has to supplement for a responsibility that belongs to the other party, the “supplication” creates “uncomfortable holes in the mimetic context” through which the user can “fall into the twilight zone of system operations,” placing “the locus of control” in a position that is unclear as to who it belongs to as well as difficult to reach. In human-computer interaction and user experience design, it should be clear who is doing what in the interaction. If the goal of the interaction, for example, is to calculate a $124/5$, the user should be the party entering the dividend and divisor while the computer is responsible for interpreting the input and calculating the answer. The human and the program being used have two different, distinct roles that they each need to fulfill to create a smooth user experience and to successfully complete the task at hand.

These two distinct roles can be found in the use of search engines to find information—the program scours all available sites at a speed no human could achieve on their own and delivers the results via a user interface, while the human directs the computer towards the end goal through the user interface:



(Search query on Google)

To find search results on the topic “human-computer interaction” in Google, agency and power is divided between the user and the computer program. Circled in blue is the user’s action—the user directed the search, telling the computer what words to look for. The program itself would not be able to direct a search on its own; it needs outside input in order to do a search task. In the red circle is the computer’s action in this interaction—upon the user typing in their search query and clicking enter, the computer found 557 million results relating to the query and organized them by relevance to the user in under a second. The human and program have exclusive capabilities that the other lacks: without the software, the human would have no way to find all the relevant results in such a short amount of time, and without the human, the software would not know what to search nor would it bother searching for anything. The human has the ability to

improvise and make the decisions on what to search for, while the program has the power to calculate and do the work that is impossible for a human being to do.

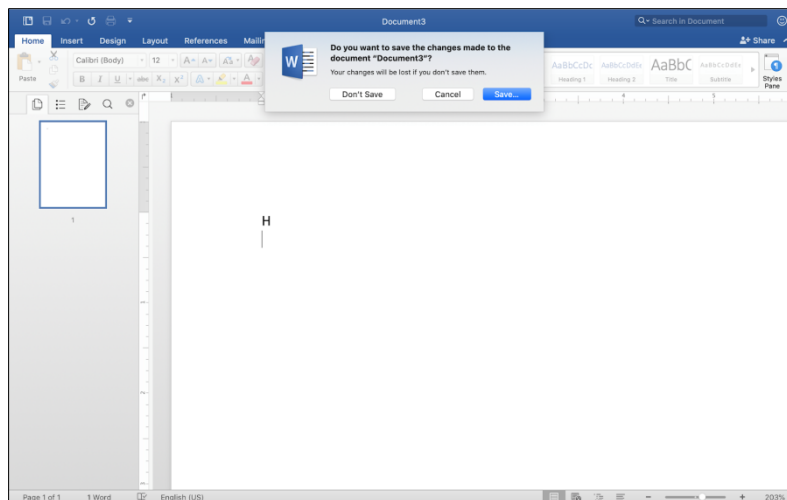
This relocating and shifting agency, however, helps give nonbiologic objects (NBOs)—specifically computers—the status of actor. Owens notes that in order for a nonbiologic object to be an actor, its user must “do work”—the user needs to work with the nonbiologic actor in order to complete the task (Owens 568). In order for both parties to complete the work, Owens argues, four different things need to happen simultaneously: “(1) we need to see an NBO as being capable of independent action, (2) this action or actions threaten our goals, (3) said goals are of sufficient importance that we must address the threat, and (4) the NBO is critical to the task at hand and thus cannot be easily or quickly replaced” (Owens 568-569). In order for a nonbiologic object to be an actor, the situation in which it is being used and doing work must have high stakes. The software is capable of a type of independent action that could possibly “threaten [the] goals” of the user. The user, in turn, must “address the threat” and direct the software’s power towards completing the goal. The ability and “independence” the software has in the interaction is irreplaceable and exclusive to the software—only it is capable of completing its parts of the task. The interaction between computer and human resembles a power-check. The user needs to make sure that the program is operating properly and that they are directing the computer’s “independent action” towards completing the task, while the program gives the user both the medium to direct the interaction as well as provides the technical ability to complete the technical parts of the task. The program is a tool that responds to the user’s direction, while the user responds to and checks the different outputs the computer provides.

Laurel provides an example of this interaction as a check of power between the software and the user. In her discussion of shifting agency, she poses to her reader the following questions:

Who or what is the source of these messages?
 Are you sure?
 Loading.
 Your application has unexpectedly quit.
 I DON'T KNOW THAT WORD.

(Laurel 163)

The source of the first few messages is the software, which gives the user these messages to communicate its actions as well as to verify the user's intentions. These messages are meant to make sure the user is aware of the state of the interaction and its progress toward the shared goal and that the user and the computer have a mutual understanding of what the intended actions are. An example of this would be a variation of the "Are you sure?" message Laurel provides that appears in Microsoft Word—when the user Xs out of a document that isn't saved, a box pops up asking the user if they want to save the document:

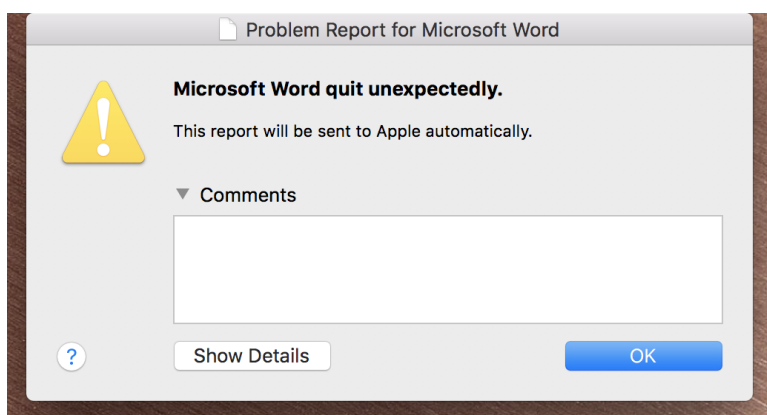


(Screenshot of Microsoft Word Pop-up)

Microsoft Word's program views the act of closing the document without saving as a threat to the task driving the human-computer interaction. By delivering a precautionary message, the

computer has been tasked with making sure that the act of exiting out of an unsaved Word document was intentional and not a human-error. In the case of this specific image, it appears to be intentional. There is only one letter written on the document, indicating that it is incomplete and that the user doesn't have much to lose from not saving it. This is something that only a human would be able to understand; a computer in this situation would only know how to keep the document open or to close it depending on what the user clicks on, no matter the content of the document. As programmed, the software's messages guide both actors to check in on each other to make sure each other's actions were intentional.

The messages that Laurel provides as examples also serve as a mode of communication from the program to the user on the state of the software's actions— they clearly communicate how the program is doing in completing its part of the task that drives the interaction, as well as any blocks it might experience in doing its part. An example of this is the “Your application has unexpectedly quit” that Laurel cites in her discussion of agency: a message that the Microsoft Word program is also equipped with in the case the software crashes or fails (Laurel 163).



(Microsoft Word unexpectedly quitting pop-up)

When Microsoft Word quits suddenly, the program provides the user with the above pop-up, alerting them of the error. It assures them that Apple— the company that makes the operating system for Mac computers— will be made aware of the situation, and gives the user the option to

include comments in the report. If the user wants to know more about why the application quit, the computer gives them the option to see the details of the glitch through the “Show Details” button. The program, despite the unexpected crash of the application, provides the user with several options to move forward and measures to prevent this problem in the future. It communicates exactly what happened in the software’s part of the interaction through the pop-up box, curbing some of the understandable panic or confusion the user may experience if the application just crashed without any notice or explanation. A key part of human-computer interaction and positive user experience is clear communication between user and program: human-computer interaction is not just the computer software and human user acting together to complete a goal, but also clearly communicating to each other where they stand in the progression toward the shared goal. Like in any other interaction, clear communication is important to determine future steps, especially in light of unforeseen circumstances and events that could interfere with the task at hand.

Community Human-Computer Interactions and Actor-Network Theory

Human-computer interactions, however, are not isolated to just a single human-computer pair. Not only does the interaction reflect back to the programmers, researchers and designers who designed the interface, the course of a single human-computer interaction can shape the course and experience of other human-computer interactions through cross-referencing and sharing information that each agent or actor might find useful, creating networks and ecosystems of information falling under a similar area of interest. Actor Network Theory (ANT) suggests just that. Originating from the work of sociologists Michel Callon and Bruno Latour in the 1980s and later expanded upon by John Law and Annemarie Mol, ANT is the idea that biological and nonbiological actors exist in ever-changing, temporary networks where agency shifts constantly

between actors (Potts 286). These temporary networks are called actants, and “comprise [of] any actors— cell phones, blogs, people, and so forth— that have the ability to act and do act within the network,” as well as form “assemblages of relations specific to an individual act or broader event” (Potts 286). Different actors and human-computer pairs come together to complete a task or work towards a common goal under a specific set of circumstances that draws them together.

Actor Network Theory also reflects the pervasive role technology plays in 21st century society— it holds that “technology and society are inherently intertwined, co-constructing and stabilizing each other” (Waldherr, et al. 3956). Technology and society construct each other— society originally formed the technology, while technology, in its increasing pervasiveness in everyday life, shapes society, culture and behavior. Technology has extended far beyond being just a tool— it alters the behavior of human actors by integrating itself into the environment of human society itself. Users of technology are not interacting with mindless objects, but with a digital “environment” which will “respond that will affect [the user]” (Owens 571). The stage on which the network of biologic and nonbiologic actors act and interact upon is the environment which the actors co-construct together— their actions and relations bounce off and build upon each other to shape society and culture.

This idea of technologies shaping human society and behavior is not exclusive to the digital technologies of the late 20th and early 21st centuries— similar patterns have emerged throughout the course of history. In his article “Writing is a Technology that Restructures Thought,” Ong discusses the effect the technology of writing and literacy has had on human consciousness. Writing, Ong argues, is a technology that has shaped human consciousness and thought, and has been “interiorized” to a point where literate people do not notice the influence

writing has on our thoughts (24). To illustrate his point, Ong compares the thoughts of a literate person and a primarily oral person thinking of the same word:

If functionally literate persons are asked to think of the word 'nevertheless', they will all have present in imagination the letters of the word—vaguely perhaps, but unavoidably—in handwriting or typescript or print. If they are asked to think of the word 'nevertheless' for two minutes, 120 seconds, without ever allowing any letters at all to enter their imaginations, they cannot comply. A person from a completely oral background of course has no such problem. He or she will think only of the real word, a sequence of sounds, 'ne-ver-the-less'. For the real word 'nevertheless', the sounded word, cannot ever be present all at once, as written words deceptively seem to be. Sound exists only when it is going out of existence. By the time I get to the 'the-less', the 'ne-ver' is gone...Recalling sounded words is like recalling a bar of music, a melody, a sequence in time. A word is an event, a happening, not a thing, as letters make it appear to be.

(24)

In a predominantly literate society, such as the contemporary United States, human beings think “chirographically” or in terms of writing—the word “nevertheless” appears in their minds as letters arbitrarily tied to the sound (Ong, “Writing is a Technology” 24). For people from a primary oral culture (a culture where there is no writing system whatsoever), the word “nevertheless” would be “a sequence of sounds” in their minds that vanish as soon as they are spoken. The visual technology of writing has changed how human beings think of and perceive the very language they speak and the ways they communicate with one another. Literate people have internalized writing to a point where it permeates their very thoughts—they see the letters when they hear a word. A primary oral person’s relationship with language is strictly through sound—thinking of spoken words, to them, is like remembering “a melody” or “a bar of music.” They understand language in its primary and original form—a mode of communication that exists only in a single moment in time.

The advent and dominance of literacy is an early example of Actor Network Theory’s effect: writing and writing tools—both nonbiologic actors—have the same amount of agency as the people who use them, and have drastically changed the course of human history, society and

culture. Writing's effect on human thought and consciousness is virtually irreversible—literate people's thoughts are so grounded in writing and literacy that it is impossible for them to truly understand or imagine a primary oral culture where writing systems do not exist (Ong, *Orality and Literacy* 11). In addition to this, writing as an actor and agent is generative—it has made way for new technologies (such as the printing press and the internet) and ideas to emerge. This aligns with sociologist John Law's understanding of Actor Network Theory as a “web of relations” that is both socially constructed and is socially constructing:

a disparate family of material-semiotic tools, sensibilities and methods of analysis that treat everything in the social and natural worlds as a continuously generated effect of the webs of relations within which they are located. It assumes that nothing has reality or form outside the enactment of those relations. Its studies explore and characterise the webs and the practices that carry them. Like other material-semiotic approaches, the actor-network approach thus describes the enactment of materially and discursively heterogeneous relations that produce and reshuffle all kinds of actors including objects, subjects, human beings, machines, animals, ‘nature’, ideas, organisations, inequalities, scale and sizes, and geographical arrangements.

(Law 141)

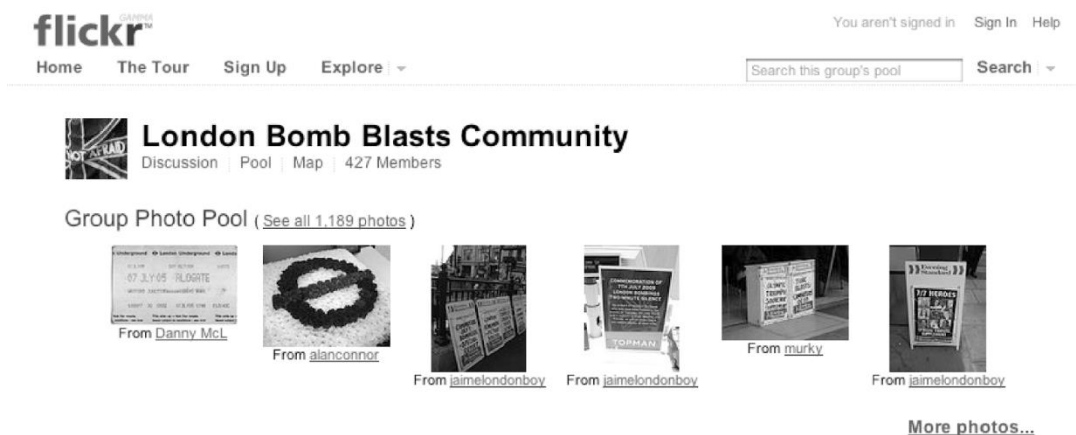
Law sees Actor Network Theory as a co-constructive idea. Biologic and nonbiologic actors and their relationships are socially constructed, but are also actively constructing and have a “continuously generated effect” on the “web of relations within which they are located.” The interactions between the actors are generative, and the “web of relations” is constantly shifting and “reshuffling”—once the goal of a temporary network is reached, the actors reshuffle to form new networks and fulfill new goals. Each time the networks change or “reshuffle,” the actors take on new roles and responsibilities that are exclusive to the new network and web of relations. This is similar to Goffman's argument that people only know each other through the roles they play and the masks they wear in specific social interactions—when the relations “reshuffle,” each actor takes on a new identity or persona in order to operate in the new relation and network they find themselves in (Goffman 19). Actor Network Theory recognizes the latent

potential and multiple facets in each actor—their agency, responsibility and role is not limited or restricted to just one network or relation, but can be utilized in an unlimited number of opportunities. Actors have the potential to take on new roles, even if they do not yet have the relations or means to do so.

In her article “Using Actor Network Theory to Trace and Improve Multimodal Communication Design,” Liza Potts studies the role Internet tools— such as social media platforms, news sites and other online media outlets— play in the aftermaths of 21st century disasters through the lens of Actor Network Theory. The Internet in these times, she points out, served “as a site of communication and coordination,” where citizens and non-emergency personnel have the ability to “forage for information and...assemble that information in an ad hoc—” they, along with the internet tools they use, are drawn together as actors in a network under a very specific set of circumstances to collect and distribute information in an organized and coordinated manner (Potts 283; 284). Even though users of a certain platform could span the globe and belong to different demographics, they naturally organize themselves through motivation to fulfill a common goal through the platform.

One such example that Potts studies in her article was the use of Flickr, a photo-sharing platform, as “a place of concentrated information coordination in the aftermath” of the 2005 London Bombing attacks on London’s public transit system during morning rush hour (Potts 287). After the bombings, tech-savvy young professionals and commuters who witnessed the attacks reached out and found each other on Flickr with the common goal of responding to the attacks— they created temporary networks consisting of biologic actors (Flickr users and moderators) and nonbiologic actors (cell phones, computers, the Flickr website, photographs and

links) that work together to collect and disseminate information about the bombings in an organized fashion:



(Potts 288)

The largest of these temporary networks formed was the Flickr group “London Bomb Blasts Community” created by user David Storey, who was the moderator of the group. Storey “served [more] as [a] researcher” who “funnel[ed] information” through the Flickr platform, “locat[ing] images and invit[ing] the image posters to join the community” (Potts 289; 288). Storey gathered active and willing participants in a single digital place to consolidate information relating to the bombings, creating a “centralized network”— if a Flickr user were to search for photos related to the bombing, their search would quickly and easily take them to the “London Bomb Blasts Community” Group Photo Pool (Potts 289). The circumstances in which these posters were sharing photos drew them together into a network— without the shared goal of sharing and disseminating information in the chaotic aftermath of a terrorist attack, the different participants (biologic and nonbiologic) would have no relation or connection to one another. The network would not exist. The actors came together only under the shared goal of collecting and sharing photographic information about the bombings for other users on the platform to utilize.

As seen in the Flickr example, participation is key for a network to operate— all actors must be able to participate and act uninhibitedly in order for the shared goal of the network to be reached. Because users are such active participants in digital actor-networks, Potts argues for the importance and prioritization of usability and user experience design of online platforms for these online networks to succeed. Potts points to CNN Safe List of the Katrina Missing website as an example of a potentially strong network falling apart due to lack of interface usability:

Hurricane Katrina: Safe List

In Katrina's path: Reported safe

CNN.com has been posting the names of those who wish to let loved ones know they are all right after the storm. If you were in Katrina's path and want to post your name here, please send an e-mail to the [Hurricane Victims Desk](#). For each person you are reporting for the list, include first and last name, age, hometown, state and a brief message. You may also include a phone number or e-mail address where those on the list may be reached. The list will be updated regularly.

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Page 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56

LAST NAME	FIRST NAME	CITY	STATE	MESSAGE
Acosta	Scott	New Orleans	LA	n/a
Acosta	Ray Jr.	n/a	n/a	Safe in Houston, TX
Acosta	Orelia	n/a	n/a	Safe in Houston, TX
Adams	Angela	New Orleans	LA	Evacuated first to Texarkana, but is now in Lake Charles, LA
Alcha	Francisco	New Orleans	LA	Evacuated to Houston, TX
Alcha	Enriqueta	New Orleans	LA	Evacuated to Houston, TX
Alegria	Janice, Angel and Melody	Chalmotte	LA	Evacuated to Houston, TX
Alexander	Les	Metairie	LA	Evacuated to Orlando, FL
Alfonso	Jeannette and Leroy	St. Bernard Parish	LA	Evacuated to Concordia Parish Community Center, Ferriday, LA
Alan	Donn, Jeanie and family	Biloxi	MS	Safe at home in Biloxi, MS
Alange Jr.	Mike and Lindsay Manguno	St. Tammany Parish	LA	Safe in Marietta, GA
Allen	Eljah (Fuzzy)	n/a	n/a	Evacuated to Atlanta, GA
Allen	Shyra and Devonte	n/a	n/a	Evacuated to Austell, GA
Alpert	Henry	New Orleans	LA	Safe in Baton Rouge, LA
Ambler	Rosalee	New Orleans	LA	Evacuated to Mobile, AL
Ambriza	Abe	New Orleans	LA	Evacuated to Lafayette, LA
Amole	Vicki	New Orleans	LA	n/a
Anderson	Elizabeth	Diamondhead	MS	Evacuated to North Carolina
Anderson	Dr. Milton	New Orleans	LA	Safe in San Antonio, TX
Anderson	Johnna	n/a	n/a	Safe in Shreveport, LA

Page 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56

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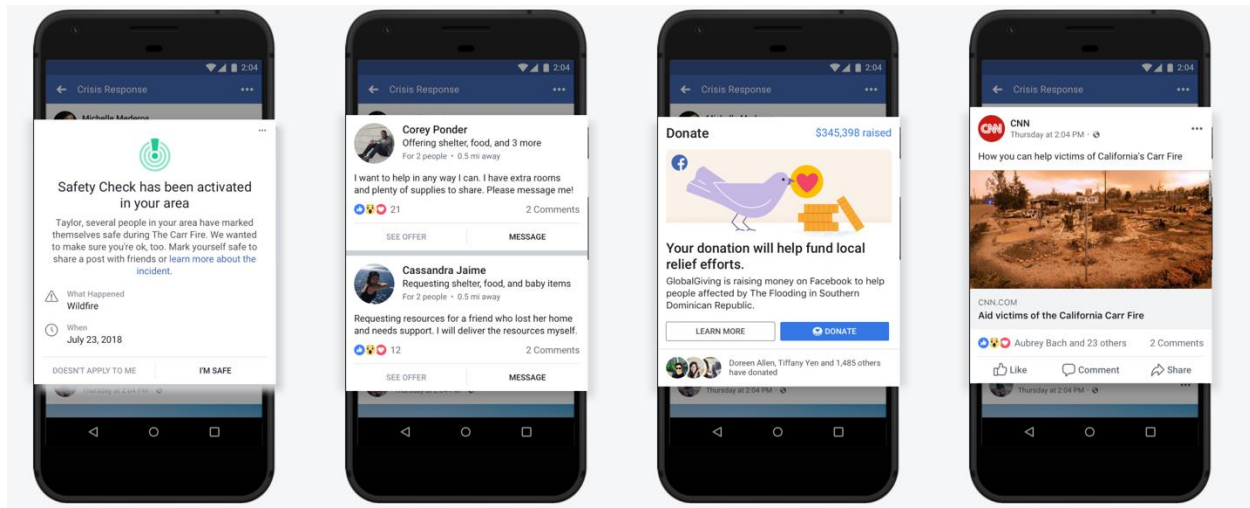
(Potts 282)

The purpose of the website was to list Hurricane Katrina victims confirmed to be safe in the storm's aftermath. Although the idea was well-intentioned, it was extremely difficult and frustrating to use, counterproductively adding to the existing stress and anxieties that the website was meant to curb. The website listed the names of survivors in alphabetical order, but the pages were labeled numerically—there was no way to tell which letter started on which page unless the user clicked through all of them (Potts 281). In addition to this, the website was a “static site” with no “entry point” for users to modify and validate the list—all of the information listed was posted by the CNN news outlet, forcing user to “completely [rely] on what CNN decided to release to them from within the virtual walls of their news outlet” (Potts 283). CNN was an “information gatekeeper” over the safe list—only they had the power and agency to update and maintain the list. As a result of the lack of usability and inhibiting the participation of users, the website and the network it intended to create failed.

While the 2005 CNN Safe List was well-intentioned, its execution fell short not only in usability and user-participation, but also in accessibility. The safe list was primarily used by those who had easy access to technology and were likely not in New Orleans at the time of the hurricane—the list listed names that were “safe in” or had “evacuated to” other communities. Furthermore, the safelist was not useful or accessible to the many people who did not have access to a computer and internet connection due to the storm, who the list was geared towards. The structure and execution of the online safe list was impractical for its time and situation, only really being used by the most fortunate of the Hurricane Katrina victims with access to a computer.

The idea behind CNN's safe list is better suited in a society and situation where internet access is wide-spread—in other words, nowadays, where a lot of people have access to the

internet through their smartphones. Other companies, such as Facebook, have identified this and developed new features for their social media platform to respond to emergency situations such as natural disasters and terror attacks:



(Facebook Crisis Response)

Facebook's Safety Check features take advantage of the social media structure to allow users to respond to emergency situations and crises in different ways. Like the intention behind CNN's Safe List, Facebook gives users in the area of the crisis the opportunity to mark themselves as safe for their social media network to see in their feeds, saving the user's network the time and stress of navigating through a long list to see if their loved ones are safe. Facebook also has features that enable users to form temporary networks to connect with each other in response to the crisis, enabling them to raise money for relief efforts, "offer and find resources like food, supplies and shelter" or share relevant articles and information about the crisis (Facebook). Facebook allows for a more personalized response to emergencies and situations that encourages users to reach out to one another and respond to the crisis at hand in a way that is best suited to them—if a user can't afford to make a donation but can volunteer their services, for example, they can reach out to the temporary network formed around the crisis to ask where they can help out. Facebook's user interface and crisis response features suit a wide range of users who can

contribute to crisis relief or seek help in different ways, whether that be seeking or offering help, letting their friends and family know they are okay or circulating important information.

A successful actor-network depends on the actors' ability to act and contribute, which in turn enables the other actors in the network to participate. If one actor's ability to act on their responsibility in the network is inhibited, the whole network could collapse and the shared goal would not be reached. User experience and usability design is crucial to make sure digital networks like the ones Potts refers to function properly— if the interface is difficult to use, users will not be able to contribute in a way that they need to for the network. The same goes for nonbiologic actors— if there is a mistake in the computer's code or a mistranslation between the human and the computer, the computer cannot operate in a way that contributes to the network. Good UX design creates a smooth, seamless experience in contributing and acting in a network— it allows users and computers alike to contribute and build temporary relations without trouble or glitches, and encourages the actors of any network to participate in the network to the fullest extent. Modern actor-networks, especially in online and digital spaces, rely on user experience design to enable active participation and to provide a platform that is easy to use and access for the actors involved.

Conclusion

The users of a digital platform behave like actors— they engage and interact with the interface and computer to complete specific tasks and reach certain goals, similar to how actors act on a stage or how people act in daily social interactions. When a user or computer engages with a specific interface, they take on a role appropriate for the task at hand— for example, a user on Amazon would take on the role of a consumer while the computer takes on the role of a salesperson and cashier clerk in order to complete the transaction. On a news website, the same

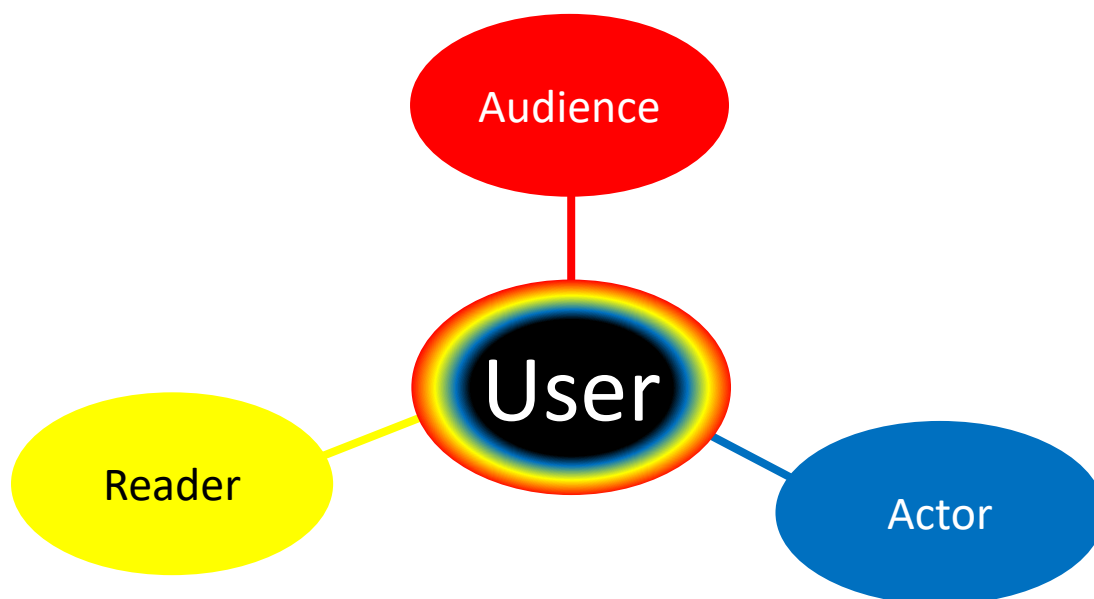
user would have the role of a reader while the computer takes on the role of a newspaper. In each different interaction, the user and computer's roles shift and change according to the interactions— they wear masks, take on personas, and react to the other's actions.

Users also behave like actors in the way that they contribute and leave their marks on these interfaces. Social media users post photos, videos and comments. Video game players make an avatar and wrack up points that other players witness in the world of the game. Users are co-creators of the interface— they determine whether the interface and the product or service attached to it will succeed or not and give insight into how to improve or change the interface for ease of use. They are actively shaping the content which they consume and how they and other users consume it, constantly creating new actor-networks that give way to more contributions and participation on these online platforms. User experience design, through the lens of Actor-Network Theory, is not about a designer designing an interface for a user, but about users shaping the design of the interface for other users

Conclusion

User experience design is a design process driven by the designer's understanding of the intended users and anticipates what they could need or want from a user interface, even if the users themselves do not know exactly what they want: designers of Facebook's Safety Check, for example, recognized that in an emergency of crisis, users want to reach out to the people they already know to confirm each other's safety and reach out for help—a capability that Facebook already provided in its original, everyday use and design. Although user interfaces look very different from that we think of as text, digital user interfaces are an extension of the established English narrative and literary tradition. They use the same rhetorical principles as an oral performance, a literary text, or a social interaction—the only difference between each is in how each appears to their respective audiences and how they present their content and argument. While a live presentation allows the presenter to gauge their collective audience's reaction to their performance in real time, a literary text gives their readership something permanent to return to and read in their own time and space. On the other hand, even though reading is a solitary activity and gives the reader a tangible object to return to and reflect on, readers aren't able to react and interact with each other or the writer the same way an actor in a live performance or a social interaction can. Each of these identities for the audience engage with the established literary and narrative tradition in different ways and have unique characteristics and behaviors that distinguish them from each other.

The user of a digital interface exhibits characteristics and reaps the benefits of all three, placing them at a unique intersection between being an audience-member, reader and actor:



Deriving different traits from each of the three categories, the user embodies a unique combination of characteristics and behaviors to become its own distinctive identity—similar to how the three primary colors (red, yellow and blue) in the image above mix together to make black, a color that is the combination of the three but looks nothing like any of them. Users of Facebook, for example, adopt a collective consciousness and have a shared experience while using the social media site—they see the same color scheme and structure, and tend to react collectively by responding to posts either through likes and comments:



(Facebook)

While Facebook's users adopt a share consciousness while using the site, each user's personal engagement with the interface is a solitary activity that requires them to read and interpret what they see on screen, whether that be other people's posts and photos or the icons of the same interface that indicate friend requests or notifications:



(Facebook)

Facebook users also interact with both the interface and each other, clicking on the different icons in order to garner a response from the interface on new messages and notifications, and using the digital interface to interact with other users. Facebook users, like the users of any other interface, exhibit a unique combination of traits derived from an audience, reader and actor, in order to create a unique identity different from all different from all three.

Understanding the user and anticipating how they behave is extremely important, especially when considering how reliant we now are on digital user interfaces for countless tasks, ranging from everyday communication and responsibilities to receiving important, local news and alerts. They are integrated into our everyday lives to the point that using these interfaces have become second nature; it is difficult to imagine a life without them to a digital-literate person, especially during the time of coronavirus when we can no longer continue life as it were in-person. User interfaces provide a new digital, visual form of language that we have learned to read without realizing it, and will continue to be prevalent in our everyday lives in the foreseeable future; this visual, digital, multi-media form of language and communication has become deeply embedded into our society, economy and culture.

This is why digital interfaces and their users are deserving of critical study, just like any other literature and language: the visual, multimedia language of digital user interfaces is “intimately related to the societies and individuals who use them” (Daniels 15). It is virtually impossible to completely separate these interfaces from 21st-century western society. Digital user interfaces are technologies and modes of expression that shape our thoughts and allow us to express our thoughts and communicate in a permanent, tangible way, just like how writing has

shaped the thoughts of literate people. The language and structure of the user interface has influenced users' consciousnesses. Understanding the form and structure of the user interface allows us to better understand the "societies and individuals who use them"—our society, and ourselves.

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