Design without Empathy: Leveraging the Past to Appreciate the Value of Human Centered Design

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This paper will examine the powerful influence of the design precedent in American education as a resource for teaching empathy in design. It will explore cultural shifts that demonstrate patterns of Egoism, Altruism, Individualism and Collectivism influence in design. Three design precedents will be carefully reconsidered from the user's point of view, so that we might better understand the dangers of an insular, self-focused design process. Through this analysis we will come to better understand the value of Human Centered Design and the benefits of working in collaborative, inclusive, multi-disciplinary teams that welcome stakeholder input throughout the design process.

Empathy and Design

A strong design process requires students to cultivate empathy, creativity and rationality. Empathy is particularly important at the beginning of the design process when ethnographic, market and precedent research takes place. Being a good designer requires a predisposition for empathy to better sense user need. Designers must have the ability to "read between the lines", using sensory information to intuit problems that users may not be consciously aware of. Empathy allows designers to identify, anticipate, articulate and define complex design opportunities in need of good solutions. A good design solution cannot occur without the clear, articulate identification of a problem. Historically, there is much agreement that understanding a problem takes greater ability and effort than solving for it. (Garson, 2014) Most of what we buy is unconsciously driven and the empathetic designer will have the ability to understand and respond to these unconscious needs.

Egoism, Altruism, Individualism and Collectivism Influences in Design

One way to understand American history is through the lens of the ever-present struggle for supremacy between individualist and collectivist values. The moral undertone that pervades the pursuit of freedom, independence and self-realization is also shared by a contrasting collectivist concern that emphasizes cohesiveness, co-operation, sharing, empathy and a prioritization of the community over the self. Responding to key historical events, each pattern responds on cue, taking its turn dominating; weaving and shaping the cultural landscape in a shifting, tensile dance. This same binary can also provide a framework for understanding the cultural shifts in the role of the American designer with respect to motivation and client relationship, the precedents produced, and their cultural influence on the design student. When analyzing the design precedent through this lens of this binary, consideration for designer intent complicates our understanding its relationship to egoism and altruism.

In his Next Design Journal contribution, From lower case d to upper case D, and back again: A brief history of d D design, Dan Noam writes of the 'Egocentric' period (1945-1987) Designer, "He didn't ask us what we liked about his designs, and he didn't need to: he was arrogant.

He knew what worked and what didn't and he developed a distinctive style around what did. He knew everybody in design and everybody in design knew him". (Noam 2011) Much earlier, the modernist designer as arrogant purveyor of good design is made evident in Le Corbusier's seminal, Vers une Architecture, published in 1923. Le Corbusier's recalcitrant posture and contempt for the client is made clear, "We have not forgotten the dweller in the house and the crowd in the town. We are well aware that a great part of the present evil state of architecture is due to the client, to the man who gives the order, who makes his choice and alters it and who pays. For him we have written 'EYES WHICH DO NOT SEE'". (Le Corbusier 1970) His is a sentiment made possible by a brave new industrial era, imbued with technological growth, and great economic opportunity. This portrayal of the relationship between designer and client captures the ethos of an era where the Designer is King and stakeholders are expected to fall in line. Ensconced in this ideology is the firm belief that the client cannot be relied upon to know what would best benefit them and the human condition. Designers must lead the way; modern objects will create a modern state of mind. (Le Corbusier 1970)

It is impossible to make clear delineations and understand the relationships between tendencies toward egoism and altruism, and individualism and collectivism in American design. These complex historical entanglements can be especially appreciated when one considers other celebrated designers of this period such as Richard Neutra, who were renowned for their attention to client need. Rather than singlehandedly impose his artistic vision on his clients, Neutra often made use of stakeholder surveys to better inform the design process; a practice largely unheard of during his time. (Chronan, 2011)

Throughout history, Design was often employed as a means to convey wealth, influence and status by both the client and the designer. In the new, post-industrial economy, avant-garde novelty became central to this pursuit. Fueled by media attention and critical acclaim, a select stable of designers came to enjoy celebrity status and sought to produce increasingly iconic works. The Fountainhead's Howard Roark embodies this phenomenon. (Rand 2005) Refusing to neither compromise his creative principles, nor honor his client's requests, Roark epitomizes the modernist design-hero stereotype. Author Ayn Rand explains that Roark, "struggles for the integrity of his creative work against every form of social opposition" and represents a new concept of rational self-interest. He is an independent thinker who does not value the input of others when making decisions and is a demonstration of the principle of egoism. (Peikoff 2018)

First published in 1943, The Fountainhead was introduced to Americans on the precipice of McCarthyism, the cold war, and the second 'red scare'. Historical context does much to explain the nation's receptivity for the thematic concerns of the book. The portrayal of the designer as an independent, libertarian renegade; not caring for his client's concerns and beholden to no one, is deliberately intended to serve as a contrast to the principles of communism. Individualism is thought to be a uniquely American aspiration an modern American folklore ascribes the following quote as being potentially attributed to Henry Ford, "If I had asked people what they wanted, they would have said faster horses". Ironically, all totalitarian regimes are built on this same premise; the idea that people couldn't possibly be relied upon to know what is "best" for them.

The Power of the Precedent as a Teaching Tool

Design precedents are commonly used as a research tool to establish authority, meaning, and a 'right to life' for future designs. Precedent studies help designers identify market opportunities and cultural shifts; serving as a guiding force in the design process. Precedents can also teach the practical value of empathy in the design process. We will examine three precedents from different design disciples that make a powerful case for the value of empathy and a collaborative, human centered design approach.

Farnsworth House

When teaching the importance of empathy, a favorite anecdote is the well-documented experience of Dr. Edith Farnsworth, a brilliant poet, translator, musician, physician and nephritis researcher for whom Mies van der Rohe designed a vacation home on a 60 acre site purchased in Plano, Illinois. His unhappy client would later contribute to a mainstream hit-piece, conflating the International Style with communism and citing the Farnsworth House as an example of "bad modern," indicative of "'totalitarian' design". (Gordon 1953) In architecture schools, Farnsworth House continues to be greatly revered as the modernist, utopian, glass house prototype for machine-age living and is frequently assigned as a first year precedent replication project.

The same year that construction began on Farnsworth House in 1949, The Fountainhead was released as a film in the United States, further expanding the story's popularity. The appealing portrait of the individualistically oriented design professional, morally entitled to hold his truth above all things and people, was released for easy consumption into the ripe historic context of cold war America. The late Lebbeus Woods observes that the film, "has had an immense impact on the public perception of architects and architecture, and also on architects themselves, for better and for worse". (Woods 2008) Given its timely release, one has to wonder what, if any influence this depiction may have had on Mies and Farnsworth.

Farnsworth House, 2008 Courtesy of Landmarks Illinois

In keeping with the Howard Roark trope, rather than seek the input of a diverse multi-disciplinary team of specialists, Mies chose to serve as his own contractor on the project. He daringly situates the house on a lush basin of the Fox River that was prone to flooding after winter meltdowns and large storms. Although Mies thought to elevate the house above the 100-year base flood elevation, this provision proved insufficient. Beginning in 1954, three years after Edith Farnsworth took occupancy of the house, floodwaters rose above the main level elevation at least six times, resulting in serious damage.

Although greatly celebrated as an architectural masterpiece, the project was something of a disaster for his client. The over-budget Farnsworth House was prone to unnerving bird-strikes against the reflective glass, suffered heating, cooling and negative draft challenges, had little ventilation, was plagued with construction and systems failures, and multiple maintenance challenges. The house failed to address many of Farnsworth's requests and needs, both tangible and emotional. Mies' individualistic, Roarkian

disposition is curiously antithetical to later incriminations consociating the International Style with communism; with Mies' Farnsworth House being singled out as a prime example. (Gordon 1953)

Adding to the salaciousness of the inevitable, ensuing legal drama, it is widely rumored that Mies may have seduced Farnsworth in an effort to make real his architectural ideals, which until that time had remained largely theoretical. Long after their personal relationship ended, Farnsworth continued to inhabit the house with much discomfort. What's worse, Mies' student apostles would regularly travel to the property and trespass intrusively in an attempt to photograph the house. A constant stream of visitors could be seen from her large glass windows, attempting to peer in, making her feeling like a "prowling animal, always on alert". At night it was worse; while illuminated from within, one cannot see out of the house but remains aware that others can see in. The glass acts as a mirror and all Farnsworth could have seen was her lone, haunting reflection moving about the space. Mies was nowhere, Mies was everywhere and although she'd paid dearly for it, this house would never be hers. ''My Mies-conception,'' Farnsworth later wrote in her unpublished memoirs. (Norwich 2003)

General Electric Speed Cooking Ranges

Simple lever and spring mechanical push-button controls were an exciting new innovation that began to appear in the American market just before 1940. As push-button technology was perfected, its use grew widespread and was adapted for many new applications, including car radio button presets, manual television tuners and car power-windows. When it was first launched, push-button technology was seen as a technological marvel and semantically evocative of a higher end product.

 In 1948, the Range and Water Heater Division of the General Electric Company in Bridgeport, Connecticut introduced pushbutton technology to their new Speed Cooking Ranges. Shortly thereafter, GE began referring to their push-buttons as a "Keyboard" feature in advertisements. A similar savvy branding move had made earlier when GE adapted the heating coil and renamed their adaptation, Calrod ™. This was likely meant to distinguish GE from other manufacturers who had also begun to use these same technologies. The new Speed Cooking Range models came with improved Calrod ™ burners, boasting of coils made 20% smaller in diameter and 25% longer than their 1915 predecessor; improving heating response time and increasing the available cooking surface. The new "wife saver" Speed Cooking Ranges were christened with such names as the Liberator, Stratoliner, Speedster, Spacesaver, Stewardess, Airliner, and Leader. Higher end models include a built in pressure cooker, double boiler, deep well cooker, warming drawers, and double oven and were finished in porcelain enamel.

The electric power used by these ranges was clouted as "clean" and "hidden". The push buttons were said to allow users to do what "comes naturally"; to "just push" the settings as one would a doorbell. In advertisements, the traditional dial controls of previous models were paralleled with the tedium of wind-up car windows and old-fashioned radio dials, and were cleverly contrasted with these newer "high class" push-button appliances. These new features likely held great appeal for countless early majority American consumers.

At General Electric, engineers served as the designers for all phases of the design process for Speed Cooking product line. The new push-button feature did not offer any improved functionality or ease of use than had its dial forbearer, but was nonetheless touted as a more "natural" and "fun" experience.

One could push-button from low to high temperature without having to phase through intermediary temperatures, as one would a dial. Even though the push-button actually resulted in less precision and control, this innovation was somehow successfully sold to consumers as a new feature to covet.

Rather than understanding cooking as an enjoyable and intuitive art form, the General Electric engineers of this era appear to understand the problem of cooking as more of a precision-oriented, scientific task; electric servants meant to help with the drudgery of home making. One driving premise for the adoption of push-buttons is their promise of increased accuracy when cooking, allowing users to replicate recipes via accurate scientific method and resulting in surefire, predictable results. GE Speed Ranges are touted as having "self-control" and helping to take the intuitive "guesswork" out of cooking. What is not considered is the inevitable change in temperature distribution and heat rendering that heating coils inevitably experience as they age over time. As a design solution, the replacement of the dial with the push-button likely resonated with most engineers' proclivity toward a systematizing cognitive style. (Focquaert 2007) To many engineers, designing a range that would necessitate less of a reliance on intuition in the cooking process might seem like a desirable challenge. The push-button solution appears to be one novel solution toward that end.

Each of the four clusters of temperature control pushbuttons are positioned, (HI, 3, 2, LO, WM, OFF) from left to right and decrease in temperature, rather than increase as one might expect, making for a deeply counterintuitive, if not potentially dangerous user experience. The Crosley Corporation also produced pushbutton ranges, but with more push-button settings than their GE competitors. Their push-buttons are also ordered in an equally counterintuitive way; in this case, (HI, 1, 2, 3, 4, 5, 6, LO, OFF) from left to right. The four sets of push-buttons are situated high on the Speed Cooking Range console, so that the temperature selection can be visually monitored from a distance. Both designs require the user to reach over hot, cooking food to make adjustments to the burner temperature. Equally problematic is that the placement of these four sets of push-buttons does not correspond to their burners in an intuitive way. Arranged horizontally on the console with two sets of pushbuttons on each side, rather than arrange the position of buttons and burners in the same manner in which a user is accustomed to reading; from left to right and front to back, the GE engineers choose the reversed interface. If any

General Electric Spacesaver Range, Courtesy of Author

market testing had occurred, it could not have been very thorough.

Early push-buttons were often color coded according to function. While the more luxurious Statoliner range incorporated color-coding on its push-buttons, the smaller, more economical Spacemaker did not; all buttons were white, giving the user no secondary confirmation that a correct button had been selected. Designed for small kitchens, the Spacemaker was available in Turquoise Green, Cadet Blue, Satin White, Petal Pink, Canary Yellow, and Woodtone Brown. The Speed Ranges were designed with consideration for easy light bulb and burner replacement, but did not much consider ease of cleaning.

The stainless steel console incorporated decorative ridges and textures that trapped difficult to remove debris and splattered grease. The many push-buttons placed just above the cooking surface were even harder to keep clean. The Speed Cooking Ranges continues to provide a valuable lesson to design students, teaching the value of empathizing with the users one is designing for. This precedent also highlights a misinformed tendency to for designers to want to design for themselves.

Pruitt-Igoe Public Housing Development

Ville Contemporaine, Ville Radieuse, Brasilia, Caledonian Market Estate, and Boradacre City are among the many examples of modernist urban planning utopias proposed in the 20th Century. At the time, few could accurately predict the impact of the automobile on design and its capacity for dehumanizing the scale of the built-environment and producing hostile places. Minoru Yamasaki's Pruitt-Igoe public housing development is another multi-layered precedent story that highlights the danger of not prioritizing empathy and multi-disciplinary collaboration throughout the design process.

The massive Pruitt-Igoe project was completed in 1954 and demolished a short time later. In his book, The Language of Post-Modern Architecture, Charles Jencks writes, "The modern world died at 3.32pm in St Louis, Missouri, on 15 July 1972" (Jencks 1991) Not since the sinking of the Titanic, had the limits of design been so painfully highlighted on such a large stage. Design's blatant inability to social engineer human behavior harkened the death knell of the "city of the future" along with modernist ideals. Though well intentioned, Pruitt-Igoe continues to serve as a cautionary tale, warning against the misinformed visionary and his arrogant idealism.

Like their modernist, utopian predecessors, Pruitt-Igoe was designed with good intentions; with the earnest belief that design alone could make the world a better place. These apartment complexes were designed as machines for living; clean, majestic high-rises coined, "penthouses for the poor". Contrasting greatly with the dense, single and double story slum housing many its new inhabitants had moved from; these apartments were initially well received by its occupants. Ultimately, both the designer and the Housing Authority demonstrated an inability to wholistically comprehend the greater context of the problem and the complicated human needs of its tenants; failing to accurately assess the outcome of welfare policy when applied to the context of this new design.

Pruitt-Igoe Public Housing Development, 1968
Courtesy of Wikimedia Commons

The criticism leveled at Pruitt-Igoe as a demonstration of the failure of modernism, is perhaps overly simplistic. A perfect storm of restrictive State welfare laws, urban "red-lining", the decline of the city and subsequent white flight each contributed to the unfortunate historical context that plagued the Pruitt-Igoe project from inception, ultimately ensuring in a broken sense of community amongst its occupants.

Pruitt-Igoe's inappropriately large scale resulted in a lack of agency amongst its stakeholders. It was an automobile scaled environment for inhabitants with no automobiles. It lacked empathy for the human condition and the design elements that could have supported a sense of pride and place. The stark appearance of these structures, combined with stripped down amenities, created a prison-like experience for its users. Equally problematic was the lack of connection of units to outdoor children's play spaces, making it difficult for mothers to supervise their children to prevent behavioral problems. Visual and spatial connections between the high-rise units and the street were not designed for, making it impossible for residents to monitor their surroundings and to cultivate a sense of pride in the common spaces. It wasn't long before living conditions became increasingly unsafe; eventually resulting in frequent muggings, gang activity, gun violence, prostitution, drug trade, and rape. Within a short time, Pruitt-Igoe became a trauma-inducing environment for the very inhabitants it had sought to uplift. (Freidrichs 2011)

Valuing Empathy in Design

Christina Sommers claims that students entering college are driven by motivations that are invariably selfish. The individualistic approach to morality in the United States is complex. Although there is a tendency towards psychological egoism, moral relativism, and radical tolerance, the understanding of moral responsibility is typically centered in organizations rather than individuals; there is a belief that moral responsibility resides in society. (Sommers 1984) A 2011 study found that American college students have shown a 40% decline in empathy since the 1980's and this trend has only accelerated, particularly since the year 2000. Researcher Sara Konrath speculates that one reason for this may be because students' interactions are decreasingly in-person. (Konrath 2011)

Caught up in the rising media frenzy depicting the designer as an avant-garde hero, many beginning design students are inspired to pursue the design disciplines as a path to personal success and renown only to become disappointed. (Rampell 2012) The failure of modernist ideals, combined with new economic and cultural forces brought on by the digital era has resulted in shifting perceptions of the designer persona. Over time, demographic realignments have shaped new generations of beginning design students with differing motivations to those of their predecessors. In large part due to an increased sense of global connectedness, beginning design students appear to be becoming more

diversity focused, group oriented and collectivist in nature than ever before. The portrait of the traditional American design hero as individualistic thinker, beholden to no one is quickly becoming dated and stale.   Just as the machine age heralded the production of works embodying its principles, and so too has the information age. Web 2.0 has heralded a new era of sharing and collectivist effort, calling for a change in the role of designer from one of Authority to one of Participation.

HCD (Human Centered Design) is a participatory design method that solves problems by considering human users and their needs while applying human factors and usability knowledge. In stark contrast to Howard Roark and his ilk, the HCD designer casts herself in a much different mold. The human response is central to this process and carefully recorded throughout the brainstorming, conceptualizing, developing, and implementing steps. HCD has been shown to be highly effective; enhancing human health, safety and performance. Cultivating a finely tuned sense of empathy is key to more intuitive and successful design outcomes, as is teaching students to listen and consider other perspectives so that they may circumvent the tendency to design for their own preferences. It is important to teach our students to focus on being experts in process first, so that they may evolve to become the facilitators of a more human centered, prototype driven approach that embraces multiple perspectives and expertise. We must strive to redefine the design heroine.

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