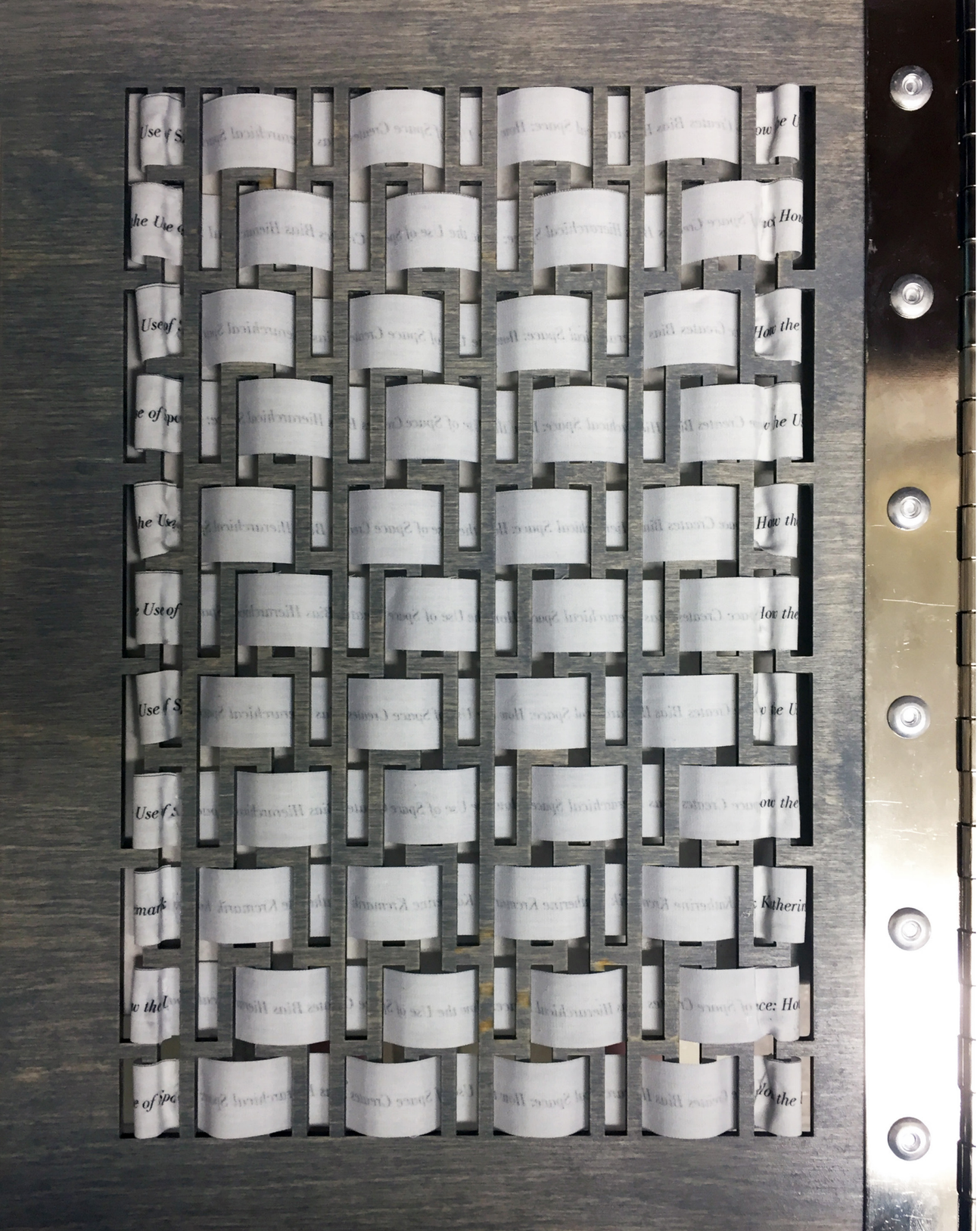
as Hierarchical
How the Use of S
ates Bias Hiera
Creates Bias Hi
al Space: How th
Space Creates
archical Space: How
ias Hierarchical
How the Use of S
Space: How th
hical Space: How t
Krcmarik
marik Katherin
rik Katherine K
Katherine K

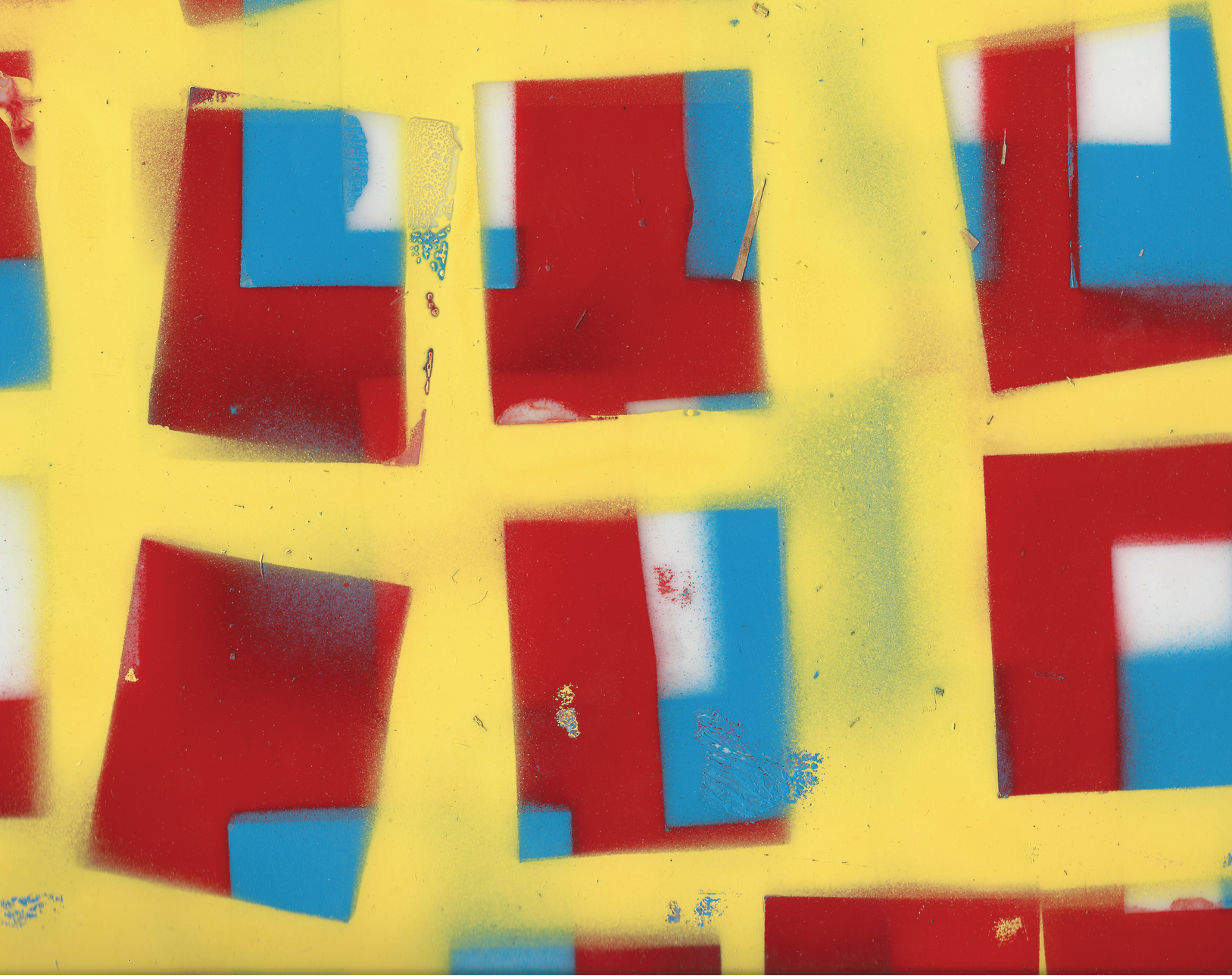


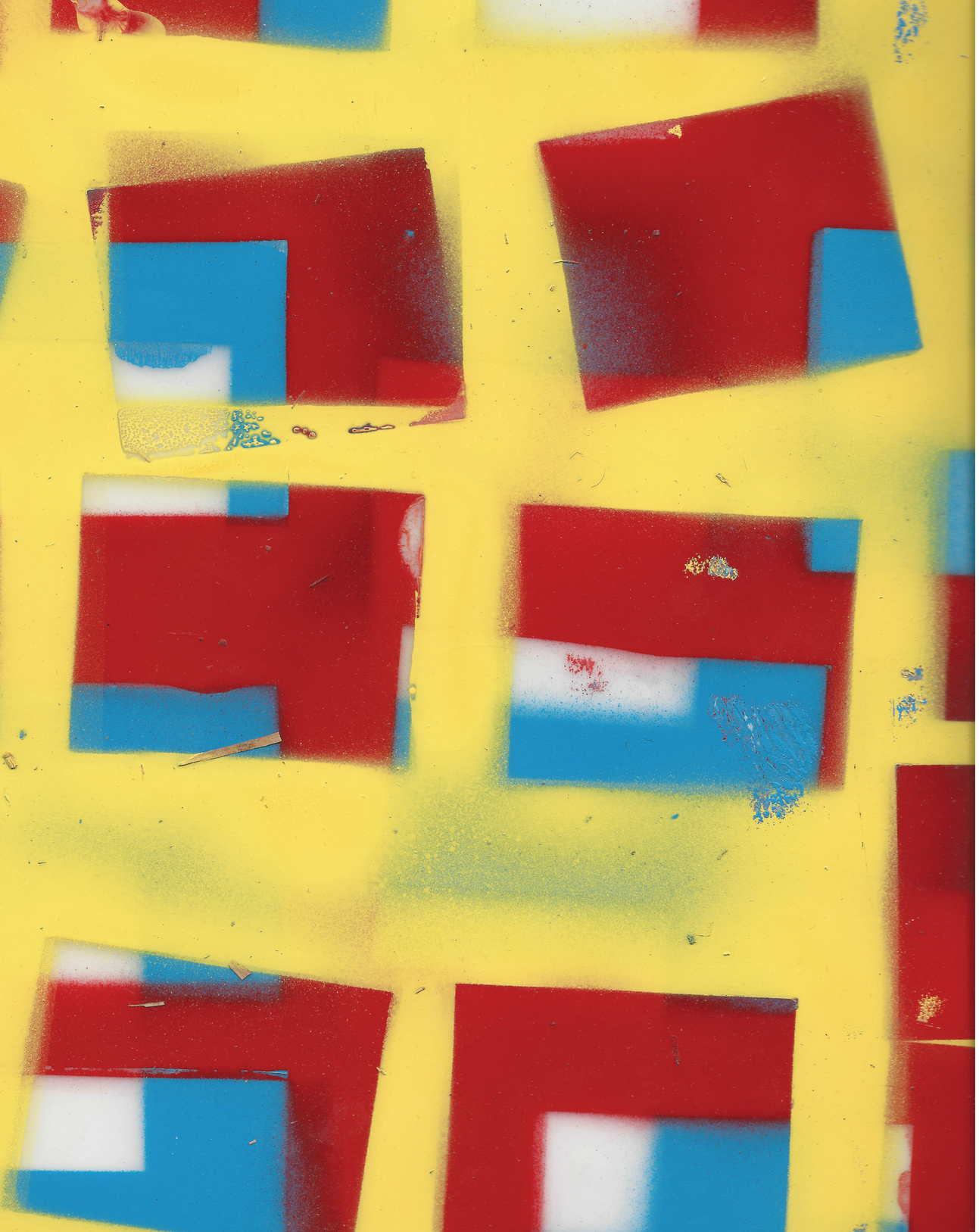
Hierarchical Space: How the Use of Space Creates Bias

Katherine Krcmarik

BE INTENTIONAL ABOUT THE SPACES YOU CREATE BUT NOT AT THE COST OF COMPROMISING OTHER ELEMENTS.

Theo Epstein





Thank you to all those who made this possible with your support, encouragement, and knowledge: Jim, Paul, Jerry, Max, Lori, Shanna, Madeline, Heather, Anna, Natalia, Silas, Ziddi, and Lorena. I couldn’t have done this without all of you.

Thank you to all female artists and graphic designers who came before me whether known or unknown whose contributions make my work possible.

A thesis presented in partial fulfillment of the requirements for the degree Master of Fine Arts in Graphic Design in the Graphic Design program at Vermont College of Fine Arts, Montpelier, Vermont.

By Katherine L Krcmarik, 2018

Approved by Master’s Examination Committee:

Natalia Ilyin

Silas Munro

Ziddi Msangi

Lorena Howard-Sheridan

Colophon

Edited by Madeline Wiseman

Printed and hand assembled by Katherine Krcmarik.

Fonts used: Bodoni, originally designed by Giambattista Bodoni but later refined by numerous designers, for quotes and titles. The numbers are Bodoni Poster. The main body text is a mix of Courier, designed by Howard Kettler and Adrian Frutiger, and Bodoni Italic.

Table of Contents

WHEN I WAS A GIRL, I SEEMED TO BE SHUT OUT OF EVERYTHING I WANTED TO DO. I MIGHT TEACH SCHOOL…I MIGHT GO OUT DRESS-MAKING OR TAILORING, OR TRIM BONNETS, OR I MIGHT WORK IN A FACTORY OR GO OUT TO DOMESTIC SERVICE; THERE THE MIGHTS ENDED AND THE MIGHT NOTS BEGAN.

Feminist Lucy Stone, quoted to Sheila Rothman

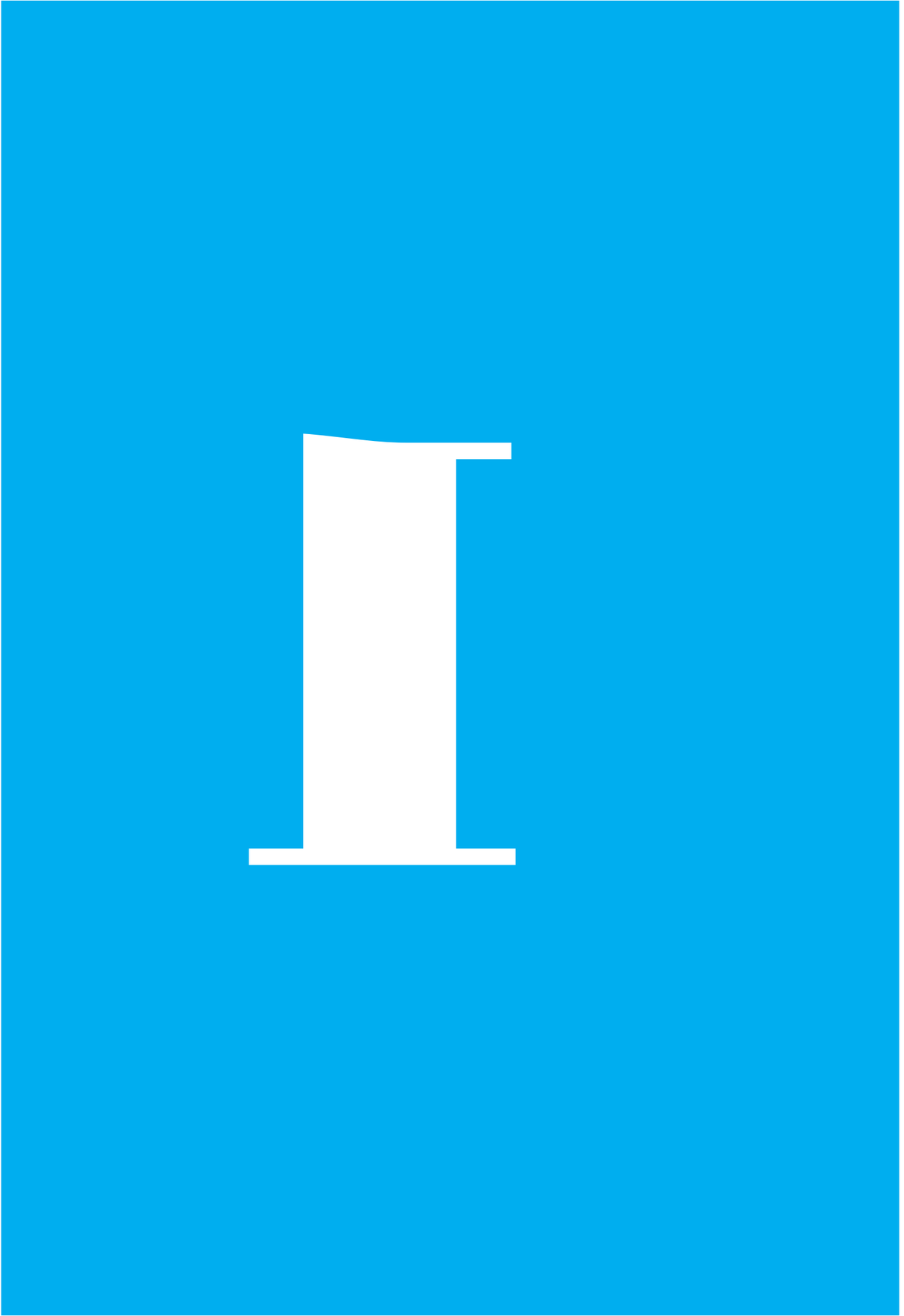
Introduction

Space is more than the sky above us, but a construct of our minds, senses, bodies, and culture. We seek to conquer space, overcome it, fill it, and avoid it. We ask for space and we give people space. We occupy it and block some from it. We live our lives in public and private spaces. For designers, space serves as a tool to unlock possibilities where without it the page or screen becomes an impenetrable jumble of text and image inaccessible to all but the persistent.

The space we give to a particular person, place, or idea on a page indicates its significance. Within culture, things that take up the most space are viewed as the most important. We build massive buildings as testament to the import of a person or place. People vie for the largest presence within culture by dominating media. Brands erect ads spanning buildings to gain attention. In our culture's hierarchy, bigger indicates better. In design, hierarchy connects with space as a key building block of practice. The use of space to establish hierarchy is one of the first concepts we learn in design educations and one of the most valued tools. Space and hierarchy are separable.

Space is a connecting thread in my work and research. My early work made clear use of space as it looked at the spaces for women in design history who failed to appear in canonical texts, thereby robbing them of their accomplishments, power, and prestige. Space connects to my training as a designer as space features prominently as a design tool and a means to establish hierarchy. In all three aspects, space appeared as a vehicle to establish and assert power. As a designer, the most important parts of a design occupy the most space. As a creator and maker who works large, I use space to garner attention for my message, sometimes forcefully and sometimes subversively. Large-scale work provides me a vehicle for asserting power that I lack. These aspects compelled me to explore space as a strategy to exert power. Projects that I created during the last two years sought to make sense of power imbalances due to the manipulation of space.

Finally, I looked inward to explore my biases towards the spaces occupied by women. By rejecting all things typically feminine I imagined I had erased gendered constraints without critically investigating the biases of that rejection. I confronted my own biases about gender, gender roles, gendered spaces, and gender-based activities. Why did I look down on modes of production associated with women? Why did the feminine and labels associated with the feminine strike me as lesser than those associated with the masculine? Why did I reject participating in the places historically occupied by women? How had the broader culture influenced my bias about the feminine and continued to foster such attitudes despite a progressive advancement of women's rights over the last two centuries? By exploring typically feminine modes of production, I gained respect for these art forms and the skill required to execute them. I began to see crafts such as quilt making and weaving not as lesser art forms but for the complicated, collaborative art forms they are. Through these explorations, I saw the bias weaved deeply into our culture constructs from a new perspective—one in which those things typically feminine could exist on the same plane with the masculine or culturally acceptable forms of making.



FOR THE WISE MAN LOOKS INTO SPACE AND HE KNOWS THERE IS NO LIMITED DIMENSIONS.

Lao Tzu

Defining Space

Space surrounds us and delights our imaginations. We stand outside staring at the night sky, looking into the vast blackness dotted with stars, and pondering our place in the universe while we dream of what lies in the vastness. We contemplate space in physics, mathematics, cosmology, geography, psychology, sociology, philosophy, and the arts. Each discipline carves out its definition. Physics views space as a boundless three-dimensional extent in which objects and events occur. They have relative position and direction known as absolute space (Merriam Webster 2018). Mathematics marks space as a set of mathematical elements and abstractions of the points on a line, in a plane, or in physical space (Merriam Webster 2018). Cosmology focuses on space as the region beyond the earth's atmosphere or solar system (Merriam Webster 2018). Geography looks at space in terms of the relationship and ownership of land (Sack 1980, 3). Psychology tends to the perception of space, personal space, and space phobias . Sociology looks for connections between the spaces around us and its influence on our life

paths. Philosophy straddles several perceptions of space from our mind's construction to a social construction. The arts look both at the construction of space and the content within the space. In these disciplines, space becomes a malleable object dependent the possibilities of our imaginations.

Philosophers have attempted to provide a universal definition of space. Isaac Newton viewed space as real and absolute things in which natural and social phenomena exist. (Newton, 1687/1972) Immanuel Kant, a philosopher, proposed a concept of space called the Transcendental Ideality of Space that holds space as a dependent construct of our minds. Our minds impose space onto our representations of objects. Kant states "Space represents no property at all of any things in themselves, nor any relation of them to one another, i.e., no determination of them that attaches to objects themselves and that would remain even if one were to abstract from all subjective conditions of intuition." (Kant, A26/B42) Michel Foucault divides space into two categories—utopias and heterotopias—to encompass the mental and physical. Utopias represent unreal spaces while heterotopias represent those mythical and real,. (Foucault, 1984) Foucault also connects space with power, "A whole history remains to be written of spaces—which would at the same time be the history of powers—...from the great strategies of geo-politics to the little tactics of the habitat." (Foucault, 1980) Henri Lefebvre viewed space as a social construction. He proposes the multiplicity of space produced through social constructions and ties the construct of space to power structures. He states "each living body is space and has its space, it produces itself in space and it also produces that space." (Lefebvre 2009, 170) Jacques Derrida connects space and time in his theories about deconstruction. For him, space temporizes. (Derrida and Stocker, 2008) While no consensus emerges, we gain a sense of the potential to understand space as vast in its potential to interact with constructions of power. These philosophies provided futile ground for my discussion of space.

Despite the wealth of philosophical definitions, the most common concept of space within the general culture is the absence of something. Space as a place is waiting for activation or viewed as a void that requires occupation. Seemanthini Niranjana notes,

"Space is conceptualized as a void or an empty place, although paradoxically, it is this that lends substance to material objects. Put differently, space is thought of as an intangible, invisible backdrop, in spite of the fact that it is what enables the very definition of material bodies. I reiterate the latter, for, as is commonly known, one of the most important ways of defining objects is in terms of the spaces they occupy. In spite of this, space is pictured as nothing more than an unfilled gap or intervening distance between objects.

Most of our lives in society are anchored by a certain perception of (physical) space. Such a perception views space as an emptiness, almost as an open receptacle within which material objects are located." (Niranjana 2001, 34)

Space achieves validation by the objects filled within it. Space waits for something to define and realize it. Under this definition, space lacks agency and is dependent on something else to award it value. In this passive role, space is powerless to affect history, society, or the cultural landscape.

In For Space, Doreen Massey defines space beyond the limitations of a void or fixed construct. Her definition allows for a plurality or multiplicity in the concept of space and the impact of a definition that allows for diversity in thought and story. Massey understands space as one bound in politics and limited by history's story. She states,

"that view of the coherence of space in turn enables the existence of only one history, one voice, one speaking position. The inheritance, for the spatial, has thus been glum. Space has been imagined, persistently if often only implicitly, as a sphere of immobility. It is time and history which have claimed 'politics' as their own." (Massey 2015, 42)

Massey's definition tackles the implication of space as void or fixed construct. She dives into the social and cultural impact of these limitations. She adds

"conceptualizing space as open, multiple and relational, unfinished and always becoming, is

a prerequisite for history to be open and thus a prerequisite, too, for the possibility of politics." (Massey 2015, 59)

Not limited by politics, Massey's definition allows for a diversified history with of thought. For feminism and other diversity efforts to exist within the historical and cultural landscape, a definition of space and spaces needs to mirror Massey's definition.

Massey speaks to the negative impact of conceiving of space as a fixed construct.

"*Conceiving of space as a static slice through time, as representation, as a closed system and so forth are all ways of taming it. They enable us to ignore its real import: the coeval multiplicity of other trajectories and the necessary outward lookingness of a spatialized subjectivity. In so much philosophy it is time which has been a source of excitement (in its life) or terror (in its passing)." (Massey 2015, 59)*

She states

"*imagining space as the sphere of the possibility of the existence of multiplicity resonates with the greater emphasis which has over recent years in political discourse of the left been laid on 'difference' and heterogeneity. The most evident form which this has taken has been the insistence that the story of the world cannot be told (nor its geography elaborated) as the story of 'the West' alone nor as the story of, for instance, that classic figure (ironically frequently itself essentialized) of the white, heterosexual male; that these were particular stories among many (and that their understanding through the eyes of the West or the straight male is itself specific). Such trajectories were part of a complexity and not the universals which they have for so long proposed themselves to be." (Massey 2015, 10-11)*

In her definition, Massey allows for complexity and messiness to exists within the world. She advocates for the ability to tell the stories of women and those of color. Her definition expands the current history by inviting more individuals to occupy the space. As she notes,

"*This character of space as the dimension of plurality, discrete multiplicity, is important, both conceptually and politically." (Massey 2015, 23)*

Her definition enable space to work as an agent of change within broader culture that has the potential for disruption. Like Foucault and Lefebvre, Massey allows for a flexibility in space's potential to alter when rejoined with time. Her belief in multiplicity hints at space's elastic possibilities for reimagining our history and future.

Such definitions hint at the impact of space upon culture. Space defines more than the coordinates of an object's location or what surrounds something. As Paul Hirst notes "space is a resource for power, and the spaces of power are complex and qualitatively distinctive." (Hirst 2005, 3) The spaces we occupy or are unable to occupy grant or deny our access to power.. The choice of where to attend higher education is one example of this.. A state school offers easier entrance standards and potential success for more people but lacks the cache to elevate its graduates to the highest corridors of power. Ivy League colleges admit few, thereby bestowing few with the privileges and benefits of graduating from them. Cultural expectations and sanctions often prevented women access to these institutions or their power for decades . Daphne Spain highlights the ways space, power, and status intertwine without our culture.

"*space and status are linked in much the same way as theory and action. Just as theory both directs and is modified by practice, spatial arrangements produce and are produced by status distinctions. Space is organized in ways that reproduce gender differences in power and privilege. Status is embedded in spatial arrangements, so that changing space potentially changes the status hierarchy and changing status potentially changes spatial institutions." (Spain 1992, 233)*

Space is inseparable from the cultural consequences of occupation or absence.

Graphic design contains a wealth of terms to refer to, use, and define space. Space plays a quintessential role in design. White space, scale, figure/ground, hierarchy, proportion, perspective, size, composition, framing, layers, modularity, grid, motion, are a few terms. Designers create in space and define space through placing elements on the page or screen. They use it as a tool to realize their designs. They learn how to manipulate it to make

design within the possibilities of the page's reality. The designer places content within the page. She defines the structure of the page by placing a grid to provide structure. She pushes around the content and determines hierarchy by scale, size, and proportion. She decides where the images and information will reside within a composition. She considers white space in design. The designer adds complexity by layering elements on the page. Motion graphics introduce movement and time. Designers wield space and space constructs as essential tools.

As with the broader cultural definition, the blank page in graphic design represents the concept of space as void waiting for activation. The designer stares at the blank page inserting type and image as the design begins to take shape. The space itself provides little value to the designer other than as a placeholder for the words, images, colors, and other design elements to come. The designer activates and redefines the space as white or negative space. The designer considers this space even as it remains thought of as empty or absent of content. While this absence serves the purpose to guide the reader through the content or allow the eye rest, this content is often viewed as missing content no matter how masterfully crafted and essential to the final design. On occasions, space becomes an active part of the design such as in the FedEx logo, but more often it remains the space around the active design. This treatment of space holds most true for two-dimensional design. Three-dimensional design forces the designer to consider both the occupied and unoccupied space because the object must be conceived of in space and as occupying space. Design seeks to fill that void. Design language views the filled space as positive while the remaining space as negative still awaiting meaning or absent meaning.

Designers Paula Scher and Barbara Stauffacher Solomon confront traditional notions of using space by working with three-dimensional work. By leaving the page, both women think about space beyond the confines of the page. Solomon's Supergraphics bend around corners and race upward and

Figure 1.1 - Paula Scher, Environmental graphics designed for Achievement First charter school in Clinton Hill, Brooklyn

outward. They don't just occupy space. They create it. With Paula Scher, her environmental graphics activate the space by encouraging a rethinking of the perception of space. Scher's two-dimensional work also realizes the same approach to space. Both woman boldly use space. Both woman leave the impression that they considered and activated every space to produce the final solution. Unlike with the page, such large-scale, environmental, and three-dimensional graphics rejects space as negative or as the absence of something. Two-dimensional designers can learn more about using the space of the page by exploring how three-dimensional designers use the entire space.

Figure 1.2 - Paula Scher, Promotional poster for The Public Theater's The Diva is Dismissed, 1994

Figure 1.3 - Paula Scher, Promotional poster series for a theater production that debuted at the New York Shakespeare Festival/ Public Theater in 1995

Figure 1.4 - Barbara Stauffacher Solomon beside an enamel exit sign at Lawrence Halprin's house at The Sea Ranch.

Figure 1.5 - Barbara Stauffacher Solomon, The influential Sea Ranch Tennis Club supergraphics by Barbara Stauffacher Solomon

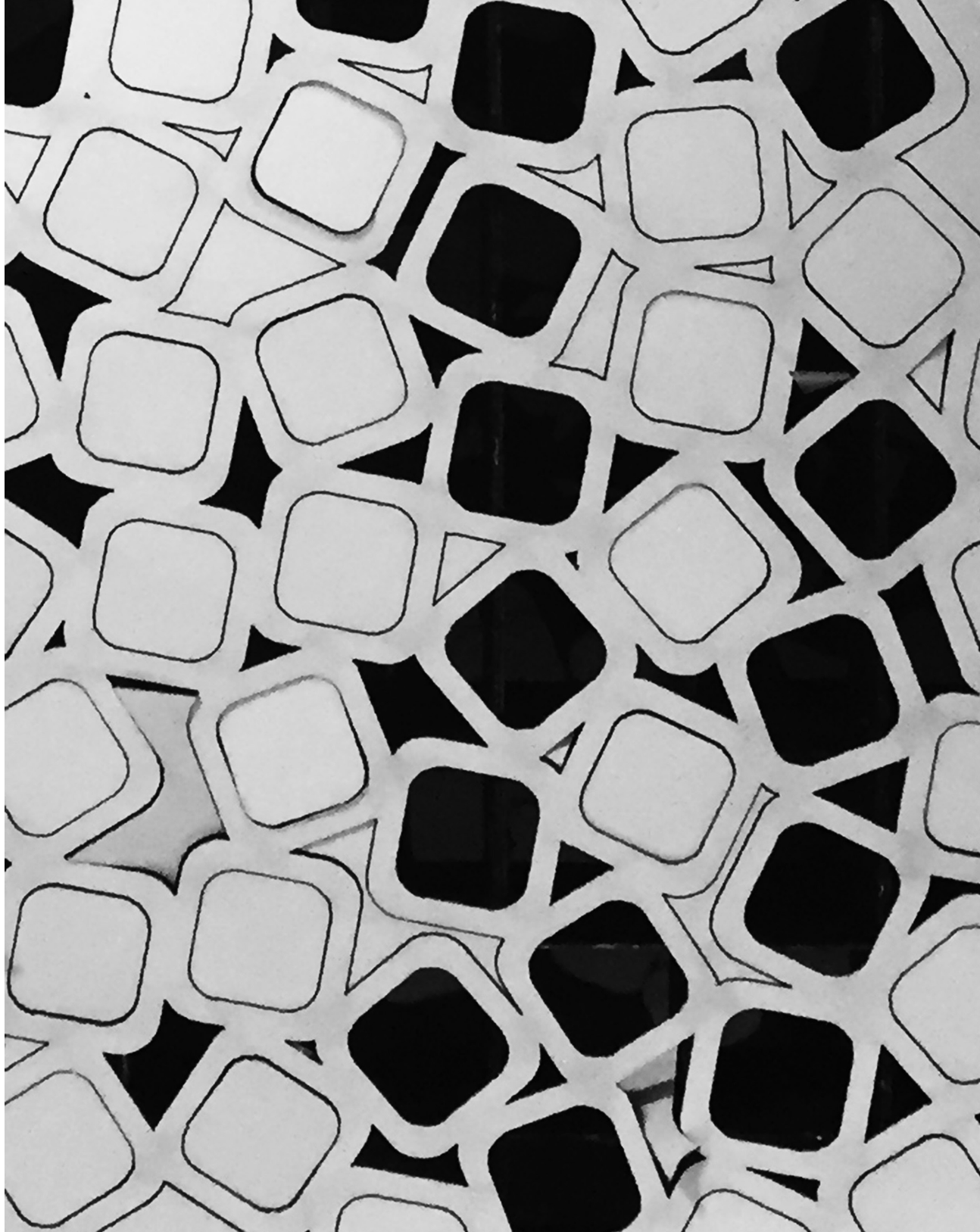
Figure 1.6 -Barbara Stauffacher Solomon, Signage created for The Sea Ranch, 1965

Figure 1.7 - Photo of Paula Scher by John Madere

Figure 1.8 - Paula Scher, Environmental graphics for Bloomberg L.P.'s headquarters located on the east side of Midtown Manhattan

EMPHASIS ON SPACE AND STATUS WEAVES THE THREADS OF INQUIRY BEGUN BY OTHER RESEARCHERS INTO A COMMON CLOTH.

Daphne Spain



Spaces for Women

While at lunch with a former colleague, she said "I can't believe we still have to deal with this in 2017." Her response came after a discussion of a recent response by male colleagues to my work. This highlights the real problems women's liberation tackled, first during the suffrage movement that secured women's the right to vote and second in the feminist movement of the 1970s and 80s that provided further opportunities for women. True equality remains elusive for women. Women account for 3-5% of the work in major museums. In H.W. Janson's art history book 27 of the 318 artists mentioned were women, which marked an improvement from 0 in the 1980s. (National Museum of Women in the Arts 2018) In design, women account for over 70% of the students but 11% of the Creative Directors. In Drum's list of top 100 designers, 13 female designers receive mention. (Kerning the Pay Gap 2018) The issue of women's absence from spaces of power extends beyond art and design. In the 2018 Congress, of the 535 member of the House of Representatives 106 are women and 22 of the 100 members of the Senate are women. (Center for American Women in Politics 2018) These stats

demonstrate the disparity in gendered spaces of power for in art and design and the broader societal structures of power. This unequal representation means men continue to make decisions that affect our, lifestyles, and careers. The rights for which our mothers fought continue to remain beyond our twenty-first century reality because spaces of power remain gendered.

Those in power use space to exercise control. Paul Hirst notes,

"Power is possessed exclusively by dominant subjects and is a means of holding down and repressing subordinate subjects such that they conform to the will of the former." (Hirst 2005, 167)

He connects space to the ability to exercise power,

"…space is more than a malleable set of coordinates in the service of power. Spaces have characteristics that affect the conditions in which power can be exercised, conflicts pursued and social control attempted." (Hirst 2005, 3)

Women are denied access to spaces and power because men exert and control their access.. However, women's work that reports the abuses of power demonstrates women's resistance to control. Media is one space where women resist power in society and culture. Power and space are intertwined within the cultural construct.

Seemanthini Niranjana explores a number of societies in Gender and Space: Femininity, Sexualization, and the Female Body to document where women occupy a subordinate position that denies them access to power. Daphne Spain also explores the concept in Gendered Spaces and comments on gendered segregation,

"Women and men are spatially segregated in ways that reduce women's access to knowledge and thereby reinforce women's lower status relative to men's. 'Gendered spaces' separate women from knowledge used by men to produce and reproduce power and privilege." (Spain 1998, 3)

She adds,

"Spatial segregation is one of the mechanisms by which a group with greater power can maintain its advantage over a group with less power. By controlling access to knowledge and resources through the control of space, the dominant group's ability to retain and reinforce its position is enhanced. Thus, spatial boundaries contribute to the unequal status of women. For women to become more knowledgeable, they must also change places." (Spain 1998, 15-16)

Both women note a clear link between women's access to spaces and access to power within society. In societies where women have the most restricted access to space, are places where they also have the lowest status and the least access to power. In the United States, women's lack of access to power can be tied to their lack of access to education, political representation, and suffrage. Even after gaining some of these rights, women's access to power continues to lag. For the social construction of gender to move towards equality, women must occupy spaces of power.

Parallels exist between how women are defined by culture and the way space is defined. Doreen Massey notes,

"Now, of course, in current western culture, or in certain of its dominant theories, woman too is defined in terms of lack. Nor, as we shall see, is it entirely a matter of coincidence that space and the feminine are frequently defined in terms of dichotomies in which each of them is most commonly defines as not-A." (Massey 2009, 257)

Massey highlights a reality seen throughout history. Women were defined by their fathers and then their husbands. They existed with little identity of their own and waited for definition by culture.

For centuries due to cultural norms and biological necessity, women were confined to the space of the home where they resided and performed domestic related tasks. These biological realities confined women to the domestic and private sphere. In contrast, men existed outside of the home in the public. This created gendered spaces within the culture.

"Masculine spaces (such as nineteenth-century American colleges) contain socially valued knowledge of theology, law, and medicine, while feminine spaces (such as the home) contain devalued knowledge of child care, cooking, and cleaning." (Spain 1998, 10-11)

Furthermore,

"…women's low status in the nineteenth century was reinforced by their segregation from men in the domestic sphere, in higher education, and

in acceptable 'women's occupations.' Lack of access to knowledge in school and the workplace limited women's ability to gain property rights and the vote. Exclusion from the political arena, in turn, reinforced public insistence on women's 'proper place' in the home." (Spain 1998, 197)

The spaces we exist in defines our life identities and the possibilities. By associating women with the home and private, we ensure they are defined by those constrained realities. When women did enter the workforce, their jobs occupied subordinate positions, offering little control of space and power, due to the persistent cultural stereotypes that gendered.

The first societies required women by biological necessity to be part of domestic life. This relegation to the domestic continued for centuries. Until the 20th century, women remained property. Their marriages were often arranged and a dowry provided to their husband. They were unable to own property or educated beyond the domestic arts. Women did gain the right to vote in the United States in the early 20th century, but social and cultural obstacles to vote remained in place. Some women still defer to male opinions, including traditional ideas about women as property rather than as people. Other women reject such ideas—if I am no longer property, why should I continue traditions rooted in the idea that I am subservient and a lesser member of society? Even in the 21st century, women still struggle against traditions and cultural norms oriented in the idea of the women as lesser members of our society.

As part of these prevailing attitudes about women, women and their work often exist in the space of anonymity. Anni Albers addressed the idea of women creating anonymous work, stating:

"The good designer is the anonymous designer, so I believe, the one who does not stand in the way of the material; who sends his products on their way to a useful life without an ambitious appearance." (Albers 2000, 39)

Albers, like so many women, sees no need to claim credit. From the everyday tasks of running a household to their role in design, women perform tasks without seeking credit, often remaining in the background. Our roots

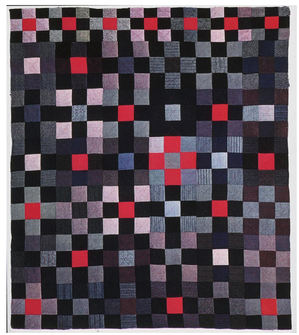


Figure 2.1 -Artist unidentified. 1930-1940. Dresden Plate Quilt

Figure 2.2 - Artist unidentified. c.1890. Hired Hand's Quilt.

Figure 2.3 - Harriet Powers. 1895-98. Pictorial Quilt.

Figure 2.4 - Ringgold, Faith. 1986. Purple Quilt.

Figure 2.5 -Silk Wall Hanging prod. at Dessau by Anni Albers

Figure 2.6 - Gunta Stölzl (German, 1897 - 1983). 1922-1923. Tapestry. textile.

Figure 2.7 - Otti Berger (German, 1898-1944) Bauhaus (German). mid 1930s. Book. Textiles-Sample Books.

Figure 2.8 - Gertrud Grunow, the only female master at the Bauhaus

in art and design lie in the anonymity of quilts, embroidery, and other fiber arts. The tradition of anonymous work for women started with the earliest works and continued through art history and into the earliest roles in the design profession. As Pat Kirkham notes

"in the twentieth century, design was a site of gendered work. Like social relations generally, the different areas categorized as "design" were subject to the organizing principle of the sexual division of labor, whereby tasks were assigned according to gender." (Kirkham 2000, 62)

This meant women often performed background production tasks such as setting type to support the work of male designers. Are these roles a social construct or inherent to biology? Is this space inherently female or is it socially relegated? These questions introduce the larger issue with the spaces women occupy. When women remain in anonymous, background positions, they remain outside the spaces of power.

For centuries, the fiber arts provided acceptable ways for women to participate by enabling them to remain within the culturally sanctioned gendered space of the home. Such creations remained anonymous and collaborative, rather than productions by singular artists who created paintings, sculptures, and architectures. Traditional modes of creation for women rely on a lack of ego, are collaborative, and gendered, qualities that are devalued in art. Rozsika Parker notes,

"The art/craft hierarchy suggests that art made with thread and art made with paint are intrinsically unequal: that the former is artistically less significant. But the real differences between the two are in terms of where they are made and who makes them." (Parker 1984, 5)

While women found an artistic outlet, the social power it conferred remained subordinate.

Quilts and embroidery offered the first acceptable options for women to participate in the arts. Embroidery originated as a way to teach feminine values at its onset in history. Girls learned embroidery to occupy their time and prepare them for marriage, skills that lacked value in

the broader culture. Rozsika Parker highlights the views held about embroidery,

"rather than acknowledging that needlework and painting are different but equal arts, embroidery and crafts associated with 'the second sex' or the working class are accorded lesser artistic value." (Parker 1996, 5)

Quilting suffered a similar fate in the broader culture. Women, including women of color, turned to quilting as a participatory activity created collaboratively, which became an easier target for devaluation. Besides the location of the home for such creations, no difference existed between these art forms and the more valued ones of painting and sculpture. The Women's Movement resisted the devaluation by working to change prevailing attitude and elevate such arts.

"The Women's Movement also had an impact on quilting, as women began to celebrate quiltmaking as an expression of the indomitable creative female spirit. Issues of women's heritage were central to the movement and redefined attitudes toward quilting, which moved rapidly from the margins to center stage, and components of the culture of quilting such as quilting bees were viewed as early feminist expressions of communal women's work." (Kirkham 2000, 175)

Efforts like this were among the first to try to elevate quilting into the same spheres of painting and sculpture, and thus art history.

The Bauhaus offers one example where gendered spaces impacted female students. Despite the literature from the Bauhaus claiming enlightenment and equality, the reality painted a different picture. The women were shut from workshops deemed inappropriate except in the rarest occasions. The women of the Bauhaus were relegated to the weaving workshop despite the supposedly progressive mission stated by Walter Gropius. The weaving workshop became the unofficial "woman's workshop" where women came to embraced and dominate the threads as art. Anni Albers connects design and weaving to broader societal and aesthetic concepts in her work. Gunta Stolzl ran the workshop and made it profitable. Gertrud Grunow was the only woman to obtain master status. Otti Berger patented weaving techniques crossing the line into author. Despite these contributions, leaders at the Bauhaus espoused a misogynistic attitude to the work created. His famous brother Oskar (Schlemmer) coined the saying in Dessau: "Where there is wool, there is a woman who weaves, if only to kill time." His mockery hit upon the prevailing prejudices in Weimar that declared weaving a "women's class" in 1920. As handweaving was classed as a craft and took last place in the art hierarchy, it seemed consistent this workshop be women-led. The Masters' Council hoped that the women's class would solve the 'female problem'." (Mueller 2009, 10), however the Bauhaus faculty perpetuated the idea of weaving as a lesser art form, despite its financial contributions that profited the school.

In my work, I tested the boundaries of the spaces permitted to women. In my first semester, I confronted the idea of private versus public with a project centered on the context of communications. I made private messages public. The most notable two—a large-scale public installation of the words and a three-dimensional interpretation of the conversation—explored how a public context of the private changed the meaning. As I added the text on the wall for the installation, I confronted my complicated feelings about the content of my private mistakes made public. Seeing one's bad decisions ten feet tall provides a new perspective on those decisions. What seemed small and insignificant when confined to the space and privacy of my phone now became substantial and unavoidable when publically installed. I could no longer pretend the weight of my choices did not affect me when they physically loomed over me. In the next iteration, I sought to explore what it would feel like to physically hold one's words. Would it change my relationship with them as it touched on the idea of the weight of words? In both cases, I found discomfort when making the private public, a response akin to the judgment airing one's dirty laundry brings. A woman challenging the line of public versus private meets greater pushback due to the social construction of gender that sanctions those who critique hegemonic power. An analogous example is the

music industry, and the criticism women receive when critiquing gendered relationships such as dating, marriage, or family. Women like Joni Mitchell or Taylor Swift whose music speaks to their relationships appear as confessional whereas men like JayZ who talk about their relationship problems appear as brave and speaking to broader issues. As the musician Emmy the Great noted in an article published in The Guardian about Mitchell,

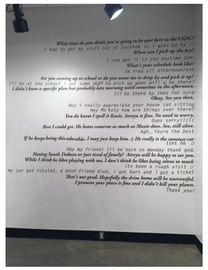
"The music industry is a place where wild assumptions are made about female artists based on very little other than appearance and society's existing pigeonholes. A male singer-songwriter might play on the same themes as a female singer-songwriter and it may end up being assumed that the girl is singing from her diary, and the boy is making statements on the big themes of life." (Pollard, 2015)

This gendered double standard replicated my experiences with the personal made public by the installation. My work received penalties for the transgression such as a forced removal of an installation and a harsh, aggressive critique of my work by colleagues while providing little support for their critique.

Our culture maintains gendered rules for what is acceptable spaces and behavior. To enter the public sphere with private material confronts and challenges those societal beliefs. The often anonymous women's work tends to smaller, more private displays. Embroidery for example usually involves working with handheld materials. Quilting and weaving may produce larger final works, but the process involves working intimately with small movements and focusing one area of the piece at a time. All three of these art forms additionally are typically displayed in private, domestic spaces versus painting and sculpture which exist in public spaces. Beyond the challenging content, with my large, public installation of the conversation or my later literal room-sized construction of a space for women, I directly confront the belief that "women's work" should exist in smaller and/or private installations. Barbara Kruger's large-scale typographic and photographic installations that challenge prevailing beliefs about power, gender, identity, and sexuality by using size to force

Figure 2.9 - Barbara Kruger. 1994. Untitled. Sculpture and Installations

the viewer to confront their ideas about the subject. Similarly, my work questions the assumptions about scale as only the province of men and the appropriate public/private display of certain types of information. Work doesn't exist on the small scale often associated with women. My project successfully works as a critique of public/private conversations and the public space occupied by women. I am by no means a trailblazer in the use of large, public spaces, but the negative reactions to such work show we as a culture still do not fully accept working in these forms. However, the execution of my large-scale work tends to remain distinctly feminine. My work confronts the space allowed for my gender while still offering a distinctly feminine interpretation of the use of space.



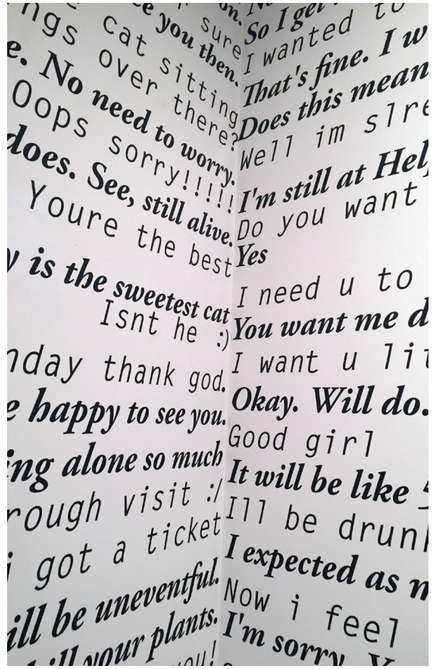


Figure 2.10 - Context, vinyl installation, 2016

Figure 2.11 - Context, vinyl installation, 2016

Figure 2.12 - Context, vinyl installation, 2016

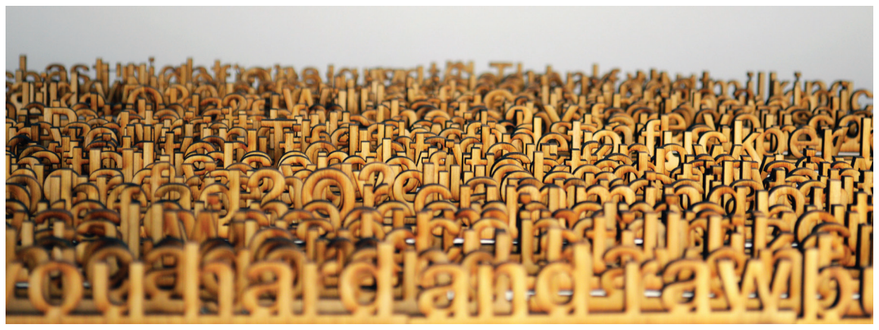
Figure 2.13 - Context, laser carved wood, 2016

Figure 2.14 - Context, laser carved wood, 2016

Figure 2.15 - Context, laser carved wood, detail, 2016

Figure 2.16 - Context, laser carved wood, detail, 2016

Figure 2.17 - Context, laser carved wood, 2016



3

DESIGN—NOT BIOLOGY—IS DESTINY.

Veronique Vienne

Weaving a History for Women

Throughout the prescribed design history, women played a supporting role in design due to lack of opportunity, rather than lack of ability. Cipe Pineles, for example, fought for a place as an art director because the prevailing belief was women could not compete or survive among men doing similar work. (Scotford 1999) Women set type instead of designing it. Women worked behind the scenes instead of being the scene. Even when women did contribute equally, their names were erased and their contributions minimized such as with Lella and Massimo Vignelli and Ray and Charles Eames to name two. In the case of Vignelli's, Massimo often received the credit for joint work or work created solely by Lella, despite Massimo's own attempts to give his wife credit. Massimo remains as a dominant figure in design history while Lella has started to receive credit in design history for her contributions. Ray Eames suffered a similar fate with Charles receiving the credit for their joint contributions. In broader culture, women played a supporting and subservient role and their needs and design proved no different.

The canon presented in design history books suggests design is an activity of white males. Women and minorities seldom appear there. To find them anywhere, one must look outside canonical ones to know their story. The history of design taught to students educate designers who receive a historical perspective of masters that fails to encompass or represent them. Decades after the separate but equal doctrines were eliminated as unjust, graphic design continues to treat women and minorities as separate and unequal. Joan Rothschild and Victoria Rosner note, "While women graphic designers have been contributing to our visual landscape since early in the century, their work has only recently begun to receive attention in literature." (Rothschild and Rosner 1999, 24) Far more literature exists now but the cannon still fails to demonstrate the work done by more recent scholars. Women's contributions are minimized. The space we occupy exists outside the mainstream, appearing with less frequency, and awarded little prestige.

Beyond the canonical tomes, the books Women of Design, Women in Graphic Design, and the Hall of Femmes series provide some information on the women in the field. Why do women exist in a separate sphere? Why isn't women's work taught in graphic design? Why isn't women's history accepted? Why were women still second-class citizens in an age when women participate in the field? These questions occupied my mind as I moved into my second semester and again with my main project in my third semester. I struggled to understand why women remained separate despite research demonstrating their important and valuable contributions. This research hinted at the question: Who makes the decision about who is significant in graphic design? In the book Women in Graphic Design, the authors note:

"The historiography of design has also contributed to the limited visibility of female graphic designers. During their lifetimes, many of the women mentioned were recognised within professional circles, and a considerable number of them enjoyed successful careers. However, few gained entry into the canon of design history, and those who did were reduced to the status of exceptions. Even today, this mode

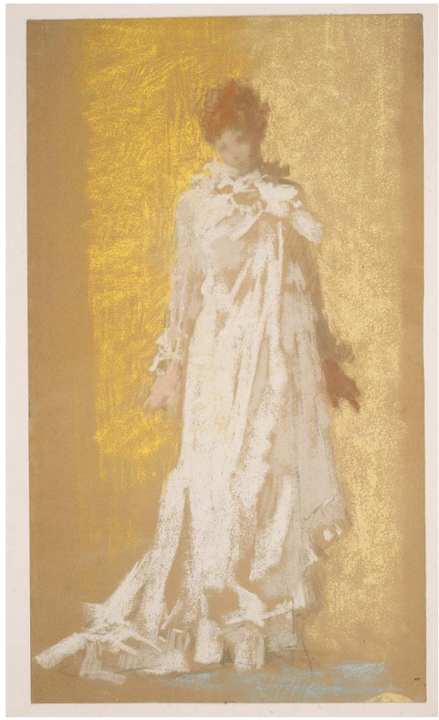


Figure 3.1 - Sarah Wyman Whitman, 1842-1904, Draped Female Figure. Paintings.

Figure 3.2 - Mackintosh, Margaret Macdonald, c.1900. Poster for Glasgow Institute of Fine Art.

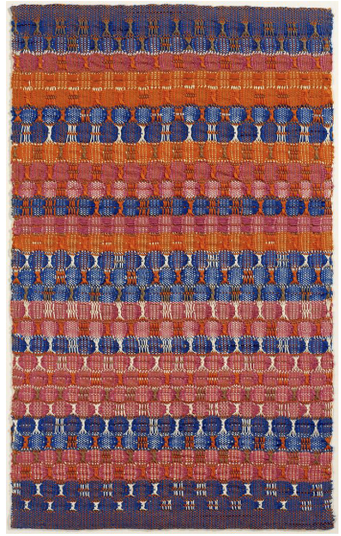


Figure 3.3 - Albers, Anni. 1954. Red and Blue Layers.

Figure 3.4 - Ethel Reed (American, 1874-after 1900) Published by: Copeland and Day. 1896. In Childhood's Country. Prints, Posters.

Figure 3.5 - Ethel Reed (American, 1874-after 1900) Published by: Lamson Wolffe & Co.. 1895. The House of the Trees and Other Poems by Ethelwyn Wetherald. Prints, Posters.

Figure 3.6 - Jane Atche. 1889. Job Cigarette Papers (Affiche Job papier à cigarettes). poster.

Figure 3.7 - Helen Dryden. 1-May-20. Woman walking under the snow, wearing a brown fur coat, matching hat and beige gloves. Background of cars and wayfarers.

Figure 3.8 - Helen Dryden. 15-Dec-21. Vogue black logo; Illustration of woman in red empire waist dress with black fur trim, holding a potted tree with a heart attached, and tossing a tree covered in jewelry out the window

Figure 3.9 - Margaret Neilson Armstrong. Bush Poppy, Dendromecon rigida. Drawings

Figure 3.10 - Ray Eames, Designer, Herman Miller, Inc. (American, founded 1923), Manufacturer. 1960 (designed); 1989 (manufactured). Stool.

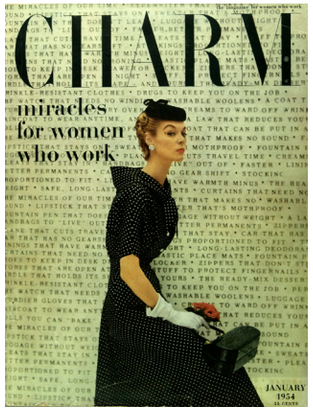
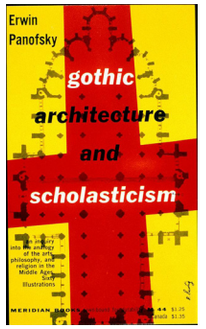


Figure 3.11 - Leave Me Alone With the Recipes: The Life, Art and Cookbook of Cipe Pineles, Illustrated magazine spread

Figure 3.12 - Cipe Pineles, Charm magazine

Figure 3.13 - Cipe Pineles, Seventeen magazine



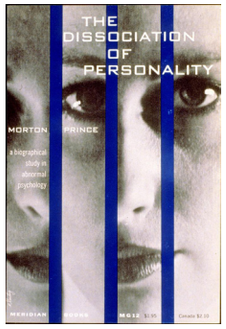


Figure 3.14 - Elaine Lustig Cohen, (graphic designer), Meridian Books, (publisher). 1957. Gothic architecture of scholasticism.

Figure 3.15 - Elaine Lustig Cohen, (graphic designer), Meridian Books, (publisher). The dissociation of personality: a biographical study on abnormal psychology.

Figure 3.16 - Sheila Levrant de Bretteville, Everywoman magazine spread

Figure 3.17 - Greiman, April. 1990. Ove Arup poster.

Figure 3.18 - Scher, Paula; Chwast, Seymour, Curator: Hiesinger, Kathryn B., 1943-. December 2, 2012 - April 14, 2013.

Figure 3.19 - Louise Fili, Various Book Covers

Figure 3.20 - Louise Fili, Wine labels for Polaner Selections

of selection is reflected in the membership of official design associations." (Breuer and Meer 2012, 26)

What status women did possess is erased or minimized in the cannon, creating a false story that such success was outside the norm. The same dynamic continues today albeit on a lesser extent.

Erasure and marginalization continues. As stated previously, Cipe Pineles occupied the role of art director at a time when women often were relegated to roles such as secretary. She took the helm of the magazines Glamour, Seventeen, Charm, and Mademoiselle after learning from M. F. Agha at Vogue. She was a trailblazer and design innovator but her place in history is lost to the men in her life including her mentor M.F. Agha and her husbands William Golden and Will Burtin. The authors of Nine Pioneers in American Graphic Design cite reasoning for excluding women,

"Because of the limits set on career opportunities for women during the formative period within which the selected designers worked, no women during the formative period within the selected designers worked, no women are included. When the story of the next generation of graphic designers is told, women will have their rightful places among the best contributors." (Remington and Hodick 1989, xii)

However, these limits make Cipe Pineles contribution significant. She obtained the position of art director at a time when such a position seemed impossible. This role paved the way for those who followed her. She continued to fight for equal accolades and access to power as her male peers. She had to work twice as hard for her accomplishments as the men within the book. Her contributions equaled her male peers but the perception of her based on gender limited acknowledging them. Her innovative and groundbreaking designs adds to the case for her inclusion and makes her absence more puzzling. Like others who worked in design, she failed to receive the official recognition her male peers did.

Cipe Pineles is one of the many voices erased or marginalized in this history. Women like Margaret

Armstrong, Sarah Wyman Whitman, Bertha M. Boye, Ethel Reed, Jane Atche, and Helen Dryden are also lost. When others like Margaret Macdonald, Elaine Lustig Cohen, Anni Albers, and Ray Eames join Cipe Pineles to appear, they stand in their husbands' shadows, and their contributions remain minimized, while their role as mothers and wives is highlighted. Today much like Pineles fought for her place as an art direction female designers fight for their place in the books. If we celebrate the work of Paula Scher, April Greiman, Katherine McCoy, Louise Fili, and Sheila Levrant de Bretteville, the stigma of gender continues to devalue their work within the context of design history. The authors of Women in Graphic Design highlight this paradox,

"Faced with the multitude of renowned female graphic designers, one is compelled to question the practices of remembrance that cause them to disappear—and the paucity of institutions that can determine historical memory. At the same time, the multitude paints a picture of the diverse careers that women-led as graphic designers for an almost continuous period since 1900. It is impressive to observe how they overcame the obstacles of an unsupportive educational environment. The energy that woman invested in self-organisation and private schooling—apart from established structures—with the goal of liberating themselves from traditional roles and stereotypes, is unique. And once again, it demonstrates the great need for a revision of the traditional stories told by design history." (Breuer and Meer 2012, 45)

Breuer and Meer highlight a multitude of women missing from traditional design history books and provide a far different picture of women's contributions than we teach. They illuminate women who are missing from the historical record of design.

The methodology for determining the significance of contributions in design is flawed. Cheryl Buckley notes the challenges facing naming the women who deserve historical recognition

"These methods, which involve the selection, classification, and prioritization of types of design, categories of designers, distinct styles and movements, and different modes of production, are inherently biased against women and, in effect, serve to exclude them from history. To compound this omission, the few women who make it into the literature of design are accounted for within the framework of patriarchy: they are either defined by their gender as designers or users of feminine products, or they are subsumed under the name of their husband, lover, father, or brother. Feminist theory, I argued, offered the theoretical tools to challenge the ways in which women's interaction with design was recorded. In particular, feminist theory enabled us to delineate the operation of patriarchy; it provided a method for conceptualizing gender and femininity, the sexual division of labor, and the hierarchical positioning of certain aspects of design over others." (Buckley 1999, 109)

Feminist movements and theory in art and design offer critique of the biases preventing women from gaining equal footing. They represent first challenges and offer hope for an equal billing in design history.

In my work, I tackle this invisibility of women in design history. I began my third semester thinking about spaces occupied by women. In a lecture by Natalia Ilyin at residency, she looked at how many libraries owned the canons of design history, highlighting those which excluded minorities and women dominated, while those offering a more diverse perspective barely made the register. This prompted my exploration of the space men occupied in the cannons. I took an edition of the six most popular design history books and began removing male names with a black redaction marker. This work highlighted how these texts celebrated and promoted men in his-story. If their names were removed, their visual presence remained. But despite the amount of my ink that saturated the pages, my redaction marker couldn't fix the underlying issue. This exercise visualized what I intuitively knew—women remain missing from design history. Would such work create equality? How would a man experience such a blacked-out text? What would be required to create a text that adequately represented all designers?

My next step involved creating a space to honor women in a non-hierarchical manner. One woman in design's name was rastered onto each piece. My two criteria for inclusion were work in design and female identity. The monument-like space I created allows for assembly that resists a vertical hierarchy based on importance. Women at different stages of their career appear side by side—the unknown placed among pioneers and rising

luminaries. The structure weaves a history of women in design, past and present, famous and unknown. They are given a physical space that demands their existence is recognized. Their names were placed on the outside of the structure, another nod towards breaking the convention associated with private or home. My long-term goal is to add to the structure until it includes as many women of design as possible. Collaboration with the broader design community to accomplish this goal is necessary to fully represent all women, especially non-western women that initial research didn't identity. Ideally, it would eventually contain the names of all women who have worked or currently work in design to the present. I would like to use it as one teaching tool to educate students in design history. One assignment might ask students to first discuss their reaction to women in design history, scholarship that explores oppressive design and marginalization, and then construct an installation based on their reflections. The assignment might also invite students to add their names, and by extension, their place within design history. As a woman, I know the frustration of not feeling represented. The structure provides an opportunity to see women as an integral and vital part of design history, rather than the limited one that persists. The structure takes women from often anonymous contributors to design history and makes their contributions visible.

By focusing on women and excluding men, this project could be accused of not representing the equality values I espouse. Many argue equality means equal representation without acknowledging the long history of unequal representation. However, I must echo what Pat Kirkham said about her book on women in design history,

"Since working on this project, I have sometimes been asked "why just women?" While pointing out that no exhibition can hope to be all-inclusive and that no one ever asked "why men?" during any of my projects involving male designers over the last thirty years, I make no apologies for singling out for study a sector of society whose histories are still not told in all their complexities—and certainly not in terms of design." (Kirkham 2000, 14)

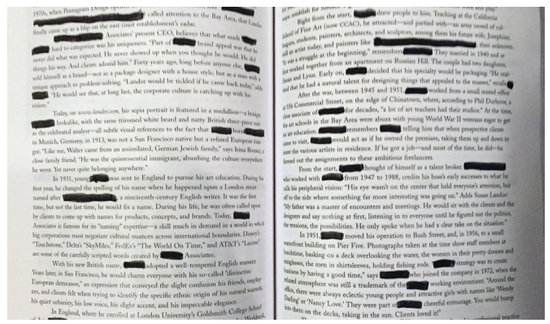


Figure 3.21 - Redacted graphic design history book, 2017

Figure 3.22 - Detail graphic design history redacted book, 2017

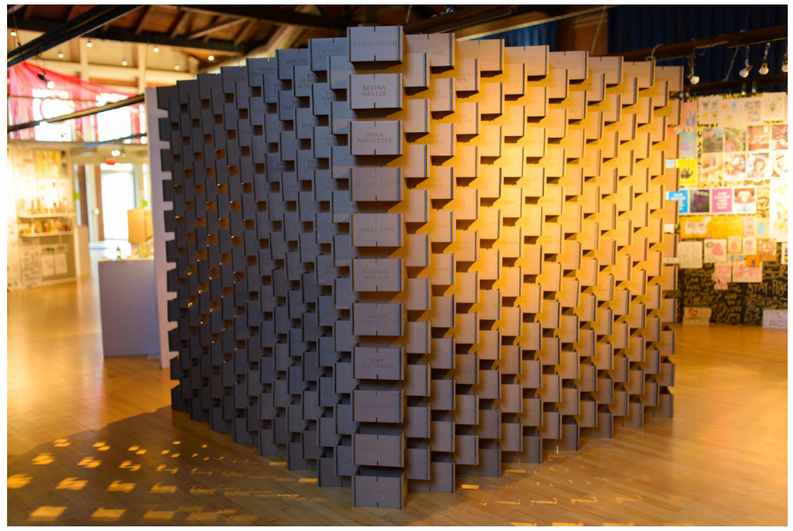


Figure 3.23 - Cardboard room installation, 2017

Figure 3.24 - Detail cardboard room installation, 2017

Like Kirkham, I make no apologies for excluding men to elevate women. If men have no shortage of places that recognize their accomplishments then in my work women have a place that highlights them exclusively. Perhaps the discomfort felt by some men viewing the structure comes for the same reason some people struggle with the Black Lives Matter concept. Black Lives Matter does not argue for one race over another, but that one race has unfair systemic cultural practices and perceptions to direct attention to these issues. In both cases, the unspoken unconscious bias becomes obvious in the reactions.

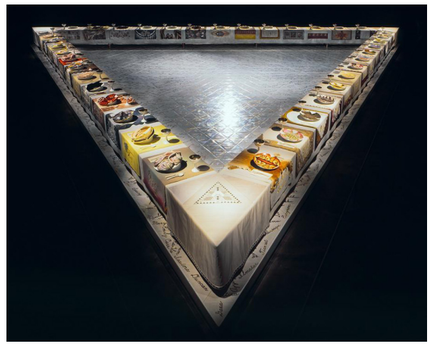
The contributions of men do matter, but by elevating women, my work seeks to highlight the lack of representation for women in spaces of power as one method to change the situation. The project gives women the opportunity to take up space in a way not typically afforded to them in design history or in the power structures of the culture as a whole. The project aims not to attack or marginalize the contributions of men but, similarly to the Black Lives Matter movement's awareness of oppression across races, it aims to resist the cultural structures that marginalize one group of citizens. Both the Black Lives Matter movement and my project seek equality as we resist the cultural forces preventing it. Those who experience oppression cannot achieve equality without equal and accurate representation within the culture. While the Black Lives Matter rightly confronts the issue directly and sometimes confrontationally, my project sought not to directly confront feminist issues like Judy Chicago's Dinner Party or Mary Beth Edelson's Some Living American Women Artists/Last Supper that clearly stirred criticism from the establishment. Instead, it sought to say these women exist and thus confront their absence. Any movement or work that seeks to call into question marginalization resists hegemonic power structures. Backlashes result. Oppression works on many levels and the lived experiences of such marginalization aren't equitable, but for many of us who seek to raise awareness of the current oppressive

Figure 3.25 - Mary Beth Edelson, Some Living American Women Artists/ Last Supper

Figure 3.26 - Judy Chicago. 1974-79. The Dinner Party

practices, pushback and backlash is yet another component of that oppression.

Design history books need to tell a complete picture, to make space for a complete picture filled with the diversity of design thinkers and makers that existed. Instead of consigning women and minorities to their own books, they need their rightful place in more complete and accurate design history books that tell the whole story and challenge the incomplete lens of western, male superiority. The label of woman or minority should no longer prevent a designer from inclusion in history book. The missing chapters of design



history must be rewritten to enable an educational experience for future designers to imagine themselves in a history where work of their gendered peers is represented, celebrated, and told. Regardless of ethnicity or gender, all designers deserve their rightful place in the canons of graphic design history and should not diminished by a qualifying label, disregarded as an exception, or marked in any way that denigrates them as lesser.

4

4

ULTIMATELY WE FIND THAT THE TERM FEMININE WEAVES TOGETHER MULTIPLE, OFTEN CONTRADICTORY, ASSOCIATIONS.

T’ai Smith

Feminine Modes of Production

At the Vermont College of Fine Arts, I have confronted my gender biases. Why did I believe crafts were lesser? Why did I believe it working in a more male-defined manner was feminist? Why did I look down on those doing "women's work"? The MFA program at Vermont enabled me to examine the underpinnings to my gendered belief system. I learned see the dynamics at work in a centuries-old power structure that leads women to see the feminine as lesser. I learned to understand my motivations to gender and not gender my actions. I learned to examine the basic premise of why being defined by gender was negative. I learned to recognize the cultural forces at work causing my bias against anything marked as female or feminine. I believed I was equal to men. Studying here enabled me to see how my rejection of femaleness reinforced the belief that being a woman was somehow not something to which to aspire. This belief system is often so engrained, that women like myself must find the tools to verbalize and think through the social construction of gender. As members of a patriarchal society, we become blind to normalized behaviors that oppress.

The rewards of following the status quo, tokenization, and being liked by those in power preoccupy and don't often invite scrutiny. Women spend more time trying not to make waves and trying to be accepted because it proves adventitious to do so. Bias's pervasive forms make them hard to detect. We fail to question why we think or value what we do. We accept without question. These accepted biases become our reality.

The feminist work of the first and second wave seems less relevant today. I'm not alone in a generation of women who reject their mother's definition of feminism because today we need a broader definition and practice of feminism. The author of Women in Graphic Design discusses the difficulty in generating interest in the classroom among students today,

"They generally felt that equal opportunity had been achieved in our society, making the problem obsolete. In the view of these young female students, the 'old' feminism—embodied by the figurehead of Alice Schwarzer—seemed antiquated, hysterical, masculine. Feminist ideology was perceived as dogmatic, as something that restricted the choices of young women, who were intent upon including traditional roles of homemaker and mother among the many options they wished to choose from." (Breuer and Meer 2012, 39)

Women like myself, even when considering staggering gender inequalities, no longer embraced the radical approach. Feminist became synonymous in popular culture with a woman few wanted to related to or be. Still, many women, like me, identified as feminist. My male students often recoil when I state that I am a feminist and then say something like, You don't look like a feminist. How does a present day feminist appear when many believe equality has been achieved? Why does my feminist claim shock? Do my male students believe all options are available to women like me or do they too sense the reality is less than rosy?

My path towards feminism included confronting the paradox of upholding feminist ideas while simultaneous eschewing anything marked as feminine. I was unaware that rejecting feminine qualities didn't empower me or erase how culture gendered me. I rejected feminine qualities of expressing emotion, becoming a mother, and domestic activities like cooking and instead embraced skills like ambition, scholastic excellence, and competition. Like many women who are smart, ambitious, and driven, I sought to excel. In our culture, this often meant denying aspects of myself that I might otherwise embrace. I pushed aside emotion especially in the workplace and created work devoid of any personal content or connection. Researching women's role in design was another step in my feminist evolution. By exploring what women did in design and adjacent fields and how gender minimized their roles, invited me to question the choices they made. Why had they pursued one field of design over another and what did those choices reveal about the gender constraints they faced? For example, most women of the Bauhaus entered the weaving workshop, but a few did not. Women like Anni Albers and Gunta Stolzl ended up embracing weaving and excelling at it proving the resilience of women in the face of social limitations. They worked within the system, as so many women do, to alter the perception of discipline despite its believed status as a lesser craft. It also took arguing feminism with a fake male feminist, with whom I had a complicated relationship, to show me the fallacy of my long-held beliefs. Moving outside my comfort zone enabled me to confront a fallacy that had bound me to the constant need to measure up to a culturally defined standard of worth. Until I had done this, I was unable to embrace myself or believe my work held authenticity.

The discussion of masculine versus feminine should not be seen as an end sum game with one winner emerging victorious. Instead, it is more akin to discussing apples versus oranges. Both are classified as fruit, but neither is inherently superior. Preferences can coexist. Gender differences could be viewed similarly when they're viewed equitably and coexist in harmony. However, binary and hierarchical thinking that pervades our current culture negates the possibility for a peaceful coexistence. The masculine dominates the feminine, especially in regards to gendered spaces and modes of

production in the arts. Pat Kirkham touches on this issue,

"Women artists—and, by inference, women designers—were seen to have suffered in terms of reputation not only because women were regarded as "lesser" in patriarchal society but also because the products of their labors were devalued." (Kirkham 2000, 78)

In starting my research into women in design, I had to confront my preconceived notions of the crafts and the modes of production commonly identified as female. I had adopted the cultural bias to view anything viewed as feminine as lesser. My bias saw traditional male pursuits as the only valuable avenues for exploration. But my research enabled an opportunity to reevaluate my ideas by gender.

The Bauhaus and the weaving workshop highlights these issues. The women who applied for the Bauhaus had few opportunities for education in the arts. The Bauhaus offered an opportunity for women to realize their dreams. Female applicants quickly outnumbered male applicants. Walter Gropius, the leader of the Bauhaus, claimed an intent for gender equity at the Bauhaus. In his first speech, he stated: "No difference between the beautiful and the strong sex. Absolute equality but also absolutely equal obligation to the work of all craftsman." (Mueller 2009, 9) However, despite such strong statements on equality, the Bauhaus was as steeped in patriarchal bias as other educational institutions of the time and perpetuated gendered modes of production. The authors of Women in Graphic Design talk about the gendered spaces at the Bauhaus,

"…both men and women viewed working with textiles as an activity naturally suited to women, thereby perpetuating the segregation of work according to sex which had taken hold since the nineteenth century at the latest. Some of the women artists were forced to join, although they actually had totally different desires. Some like Ida Kerkovious or Anni Albers quickly discovered their talent in this field and in the end even taught a few men such as Max Peiffer Watenphul to weave." (Breuer and Meer 2012, 34)

Furthermore,

"…the weaving workshop and the women's class were tied together. The women's class was set up by the weaver Stölzl, who claimed

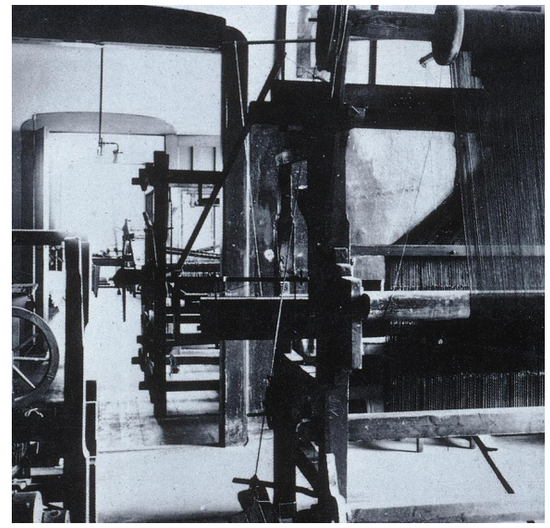
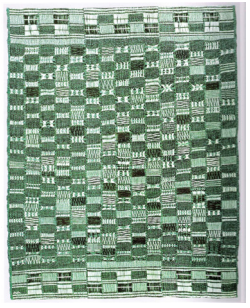


Figure 4.1 - Bauhaus Weavers Workshop

Figure 4.2 - Otti Berger in the Weaving Workshop at the Bauhaus



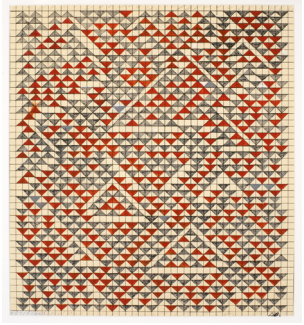


Figure 4.3 - Anni Albers weaving at Black Mountain

Figure 4.4 - Textile, Anni Albers

Figure 4.5 - Anni Albers, Tikal, 1958; Cotton.

Figure 4.6 - Albers, Anni. 1961. Haiku.

Figure 4.7 - Anni Albers, Study for Camino Real, 1967. Gouache on blueprint graph paper.

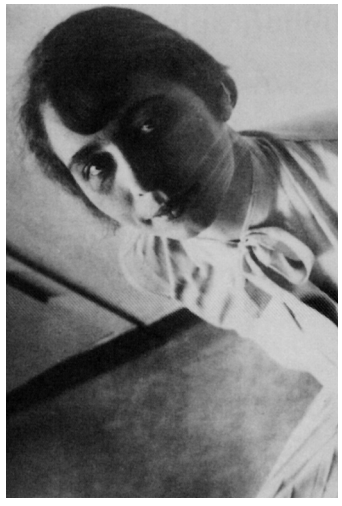


Figure 4.8 - Gunta Stölzl, (Artist), 1926--Bauhaus, Dessau, Germany. Drapery Material.

Figure 4.9 - Linen & Cotton Wall Hanging prod. at Dessau by Gunta Stolzl.

Figure 4.10 - Picture of Gunta Stölzl

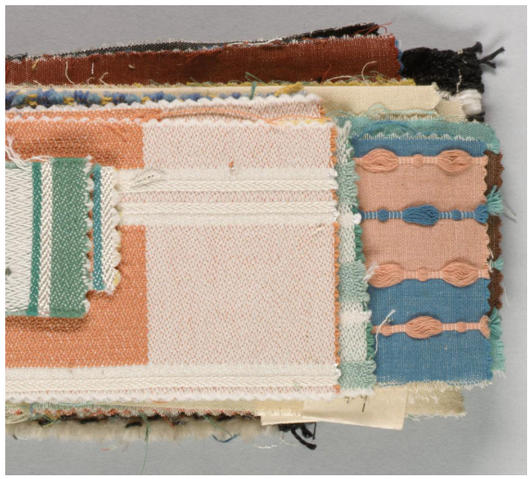


Figure 4.11 - Otti Berger, Wandteppich

Figure 4.12 - Otti Berger (German, 1898-1944) Bauhaus (German). mid 1930s. Book. Textiles-Sample Books.

a desire to create a separate space for the many women entering the school, but also at the encouragement of the Bauhaus director Walter Gropius. He wanted to segregate the female population from the other, "masculine" workshops, such as metalwork or furniture, which held more direct links to architecture; thus, a policy established what was and wasn't so-called women's work." (Smith 2014, xxvii)

Women were directed to the weaving workshop as the "appropriate" space for women at the Bauhaus. Some women fought and obtained access to the more traditional male workshops, but in general, weaving was the province of women. Interestingly, the women thrived within the workshop and managed to harness the full creative possibilities of the medium.

The women of the Bauhaus' weaving workshop participated and advanced the field beyond the imagined limitations of women. Ulrike Mueller discusses the advantages of the workshop:

"Undeterred by centuries-old patriarchal baggage, this modern medium offered artistically ambitious women an experimental field in which to examine themselves and their time, as well as a concrete earning potential." (Mueller 2009, 11)

They challenged the possibilities of the medium, embraced the reality of weaving, and then pushed the boundaries of the discipline. T'ai Smith notes,

"In this text and others by Albers or her Bauhaus colleagues, we find a textual exploration of weaving's material elements, its technical practice, functional applications, and similarities to (or differences from) other media in order to determine what constitutes a specifically modern practice—one suited to creating various kinds of textiles for modern life. In other words, a modern theory of weaving does not emerge until the students of this Bauhaus workshop begin coming to grips with their craft's 'basic conditions'." (Smith 2014, xvii)

The women of the Bauhaus elevated the potential of weaving beyond something found in the home. They confronted the idea of weaving as a hobby by turning the weaving workshop into the most profitable workshop at the Bauhaus.

Beyond just the gendered issues at work in the Bauhaus weaving workshop, weaving itself proves an interesting mode of production, involving structure and creativity. Weaving is a complex predominantly female

art form. Perhaps the prevalence of mass-produced fabric erases any appreciation for the craft required to produce the material much as the increasing prevalence of logo design and web design for minimal cost reduces the cultural appreciation of these skills. T'ai smith touches on this issue:

"So, too, the role of gender within Weimar society and the Bauhaus institution was often marked by contradictions and turns that made the designation of weaving as feminine a complicated proposition." (Smith 2014, xxx)

Weaving's complexity confronts directly the idea of feminine as lesser. The women created fabric with considerations for light, sound, and texture. The weaver considered the material and the construction.

"Once the fabric is woven, its properties such as color, material, form, and function are not so distinct from one another or from the functional end product. In any event, these properties suggest the dual nature of the textile object—its potential functionality and autonomy all at once." (Smith 2014, 67)

Moreover,

"What the medium of weaving and other forms of thread interlacing make visible, or rather tangible, in the end is their material stuff, their physicality as evidence of a practice—however inaccessible that practice is in the space of the cloth. And yet textiles do, simultaneously, stretch the limits of perception: as we wear or sit on them, we tend to forget they exist. This is a rather different version of the 'double becoming'." (Smith 2014, 174)

Weaving is both an art piece and utilitarian object, a reality not commonly associated with fine art forms. Moreover, arguably all typically feminine modes of production occupy this same dichotomy of art object and functional usage presenting an additional hurdle in recognizing these art forms as equal to sculpture and painting and their creators as artists instead of just craftspeople.

Weaving became a symbol of the creative potential of women at the Bauhaus and a feminist statement, as noted by T'ai Smith:

"Thus the weavers' theories of their medium also worked, perhaps in spite of their intentions, as a kind of feminist call-to-arms, a manifesto for recognition, in an institution that otherwise subsumed their work under the rhetorical and physical frame of architecture. An embrace of adaptability gained them a theoretical vocabulary and identity, even as it also in some sense returned them to a consideration of the domestic interior, the home." (Smith 2014, 70)

She describes how this issue became a focus of the writing by the weavers.

"The debate over the gender of textile work continued as a significant subtext in the theoretical writings of the Bauhaus weavers, who concertedly submitted their work to the language of technology at the same time that they both acquiesced to and rejected the feminine connotations of their medium." (Smith 2014, 132)

The weavers managed to take the typically female and lesser status of weaving and elevate it into a feminist statement. The women challenged the bias towards their discipline including their own biases about the medium. Anni Albers is one example of a woman who struggled with participating in the weaving workshop, but who eventually embraced them. She masterfully tamed the threads to her will. Other women like Otti Berger took their creative potential to the point of patenting their creations. The women of the weaving workshop far exceed the conventional view of weaving as a mode of production.

Weaving also provides insight through its construction. A successful weaving requires planning and an understanding of how the threads come together.

"Woven out of a binary system (the crossing of the warp and the weft), a fabric also interlocks the terms of this binary within its bond, thus holding the analytical distinction between horizontal and vertical, or weft and warp, in tension with their joining." (Smith 2014, 67)

The warp and the weft must work together in harmony for the cloth to hold or risk the unraveling of threads. while the system appears binary, it speaks to a more inclusive, collaborative interaction than a term binary one. Weaving as medium crosses the perceived binary line of art piece versus functional object.

"…the design and the surface are one and the same—they are made from the same material and process. The woven design is built in tandem with its physical matrix, so the tapestry's picture is not imposed onto a material ground but, rather, embedded in and transformed by the different kinds of threads and structures used in the process. So while another weave—the canvas—provides the forgotten, or neglected, structural ground for painting's content, the visual design of the

tapestry cannot pretend to detach itself from, or supersede, the material through which it is made on a particular apparatus—the loom." (Smith 2014, 4)

Unlike a painting or sculpture which exist only in the realm of art object, weaving exists in the space between exalted art object and everyday object. Anni Albers comments "Usefulness does not prevent a thing, anything, from being art." (Albers 2000, 59) Many female modes of production exist in this same space as not one thing or another, a space that straddles object and function.

In exploring these feminine forms of production, we find a deeper understanding of the relationship of women to the world and their space within design. Our biology defines us, as Paula Scher, perhaps the most well-known female designer, says

"I think the discomfort comes from being forced into a political position when all you are trying to do is your work. Men don't have to put up with that. They aren't forced to talk about 'men's issues'. I think women want to be able to do their work without thinking about whether or not they are being hampered, or treated differently because they are a woman. That's what makes me uncomfortable with quotas…" (Scher 2012, 233)

She adds

"How I envy my male partners who are invited to speak based on their achievements and prestige as opposed to their sex. I cannot separate my own achievements from being a woman blah-blah." (Scher 2012, 320)

Scher comments demonstrate how little gender roles have changed since the Bauhaus. Despite women taking a larger role in design and education, we are still marginalized by biology. Our accomplishments are diminished by the addition of a gendered qualifier that challenges our achievements, at best calling our work "good for a girl," while at worst dismissing it. Like the women of the Bauhaus, my gender defines my existence, my work, and my achievements within the patriarchy.

The feminine label still triggers a negative stigma despite the work done by many towards equality. Design feels this as intensely as other avenues of discourse. Many women still wish to avoid labels and situations that highlight biological differences, as the authors of Women in Graphic Design note.

"Today, women graphic designers give the impression that it is considered a stigma to be closely associated with feminism, since this diverts attention from the quality of their work. Under the current social contract and its banner of neoliberalism, relations between the sexes have purportedly been modernised, and consequently, there is a perception that the old goals of radical feminism have long been integrated. 'Is the gender debate still relevant?' was understood more as problematic formulation of the issue than as a straightforward question." (Breuer and Meer 2012, 39)

We wish to believe feminist work instilled lasting social change. However, women still find themselves relegated to different spaces than men, such as evident in recent political elections and legislation including a GOP health bill written by only male senators, efforts to defund Planned Parenthood, and state level measures to restrict access to abortion.

The core problem that continues is the perception of female as lesser, both in culture and in their creation of art. Isabelle Anscombe proposes that the experience of the artist should be considered when judging the merit of art.

"Yet even though the importance of this contribution is now accepted, the reputations of the individual artists have continued to suffer from the reputations of the individual artists have continued to suffer from the ambivalence haunting any evaluation of women's art. On the one hand, the acceptance of a supposedly 'female art' as art has allowed much that was previously dismissed as ephemera to be regarded in a new and more 'important' light, but, on the other, conventional art history has belittled such achievements and their revolutionary nature by insisting that they were a logical, almost inevitable, development within traditionally female fields. Both judgements derive from a traditional and misdirected critique of art history that ignores the true question raised by such work: whether, in art, men and women do share the same experiences and, therefore, whether the same critique should be applied to both." (Anscombe 1984, 130)

Art work's status is determined by the gender of the artist. Gender informs the way artists approach creation and the ways we view and understand

Figure 4.13 - Weaving Experiment, single color warp, multi-color weft, 2017.

Figure 4.14 - Warping floor loom in process, 2017.

Figure 4.15 - Weaving Experiment, multi-color warp, single color weft, 2017.

the art created. This consideration is often overlooked. Pat Kirkham acknowledges female artists and designers who create new definitions for "women's work" by stating:

"Judy Chicago, Miriam Schapiro, and Shelia Levrant de Bretteville were prominent in a movement to radically refocus art and design practice and education by eliminating sexism within the education system and making it more open to the ideas of the Women's Movement. Revaluing and affirming both 'women's work' and craft, feminist artists and designers linked and reinvigorated art, design, and craft through hybrid work and politicized aesthetics as well as through antimodern and pluralist discourses." (Kirkham 2000, 77-78)

When working in traditionally feminine modes of production or otherwise, these artists and designers use art to push for a greater appreciation of women and their work. These contributions mark a necessary method to create equality for artists.

5

A BOOK OR MAGAZINE IS AN INWARD VOLUME OF PAGES REFLECTING OUT ON THE WORLD OF EVENTS AND IDEAS. DESIGNERS USE WORDS AND IMAGES TO DIRECTLY ENGAGE THE PHYSICAL ENVIRONMENT AS WELL.

Pat Kirkham

Bias by Design

Beyond cultural institutions and interactions, bias appears within design. Bias includes towards a particular aesthetic or rightness, a group of people, gender perceptions and roles, the perception of space and spaces allowed for occupation, and for or against the surface. Designers perpetuate cultural bias under the guise of representing the zeitgeist of the times. However, designers have a moral obligation to eliminate the continual representation of cultural bias by speaking up during client meetings and actively evaluating their designs. Choosing images that represent the full spectrum of race, gender and sexuality offer a starting point, but designers must also question decisions that might perpetuate bias. Designers must prevent unconscious biases from permeating their work and challenge clients and employers who may consciously or unconsciously perpetuate the oppression. Designers can either feed or break bias through their visual choices and representations of groups of people. While we have seen a marked decrease in overt bias, more subtle versions of bias still clearly exist within our visual culture including using space to distort perceptions.

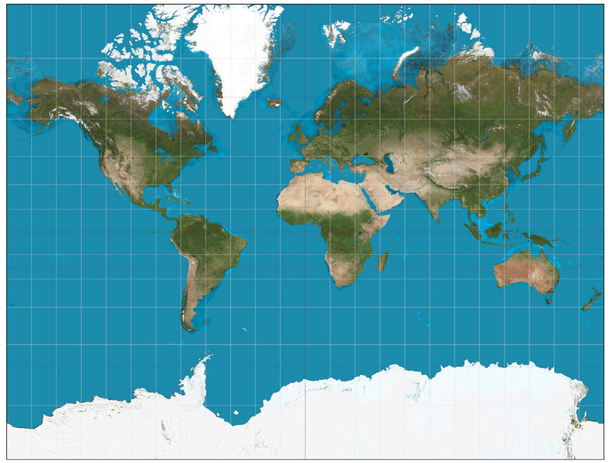


Figure 5.1 - Mercator projection, the most common portrayal of the world

Overt bias representative of sexism and racism existed for the better part of design history. Advertisements featuring sexist portrayals of women and their role reigned for most of the twentieth century. Women served as props to sell products to men or ads reinforced women's place within the home. Images of people of color as subhuman were all too common even after colonialism started to dissipate. In hindsight, the representational bias seems clear and certain. If we've evolved past some types of bias, others remain subtle, persistent, and pernicious. Women are still demeaned by being marketed to with pink products and quieter chips. Women continue to be used as sexual props in advertisements. People of color still encounter negative stereotypes in mainstream advertising. The bias is insidious in its subtlety. We as designers need to explore how our decisions contribute to perpetuating bias on a cultural scale.

Bias takes many forms and becomes ingrained in the fabric of our existence that we often fail to realize it. We rarely question why we continue perpetuating biased visual representations of information, rather than accept them without question. The Washington Post's report of the

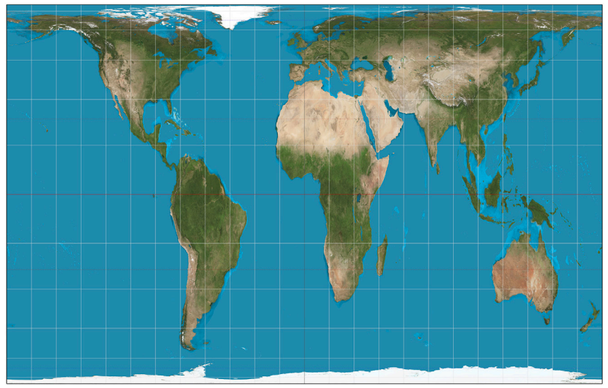


Figure 5.2 - Gall-Peters projection, more accurately portrays the size of continents

2017 Alabama special election provides an excellent example of how bias exists when making design decisions. The article lists the results for white voters before black voters and men before women. If the designers had sought an alphabetical design arrangement, they correctly listed men before women, m before w. However, this design scheme breaks down at race. White appears first, despite b coming before w alphabetically. If the story focused on how white voters almost elected a racist, pedophile, then the preference would help emphasize the message. However, the article focused on how black voters, especially black women contributed to the results. (The Washington Post 2017) The article notes that black voters make up three out ten voters in Alabama however these voters ended up as the deciding factor in the election. The graphic portrays only what percentage of each gender and ethnicity that voted for which candidate instead of giving perspective on the amount of each type of voter as well as visually showing the actual impact of the black vote on the election. The graphic could have demonstrated the complexity present in the article by showing how the minority of voters swayed the election. It also should have listed the more relevant data first as the article specifically referred to that. Instead, it followed the traditional structure where men are consistently

listed before women and white are consistently listed before black in data visualization. This placement reinforces the power dynamic and bias towards men over women and whites over blacks. For change to occur, designers have the opportunity to be conscious of biases when designing. Finding a less vertically oriented manner of delivering information and seeking more horizontal displays that eliminate bias is one method designers can explore as they challenge power.

Maps provide another example of the visual space awarded to a particular group affecting the broader perception of groups and their power. The Electoral College map in the United States distorts election results by focusing on land rather than the population-based results that determine elections. Designers have put forth alternatives that focus on population. The Mercator projection represents an image of the world that distorts the size of the continents by favoring those in the north over those in the south. The Peters, or Gall-Peters, offers a more realistic and actuate projection by showing the relationship of continental land mass. Distorted, visual pictures as provided by maps awards power to one group at the expense of another. The story these maps tell and their possible and more equitable alternatives I turn to now.

As the red southern states light up on the Electoral College map, it appears that much of the country votes for a particular presidential candidate. Far less populated states occupy more visual space than their heavily populated cousins. The map skews in favor of the Republicans to tell a visual story based on geography that says we are an overwhelmingly red country. However, physical space is not the same as population. The largest amount of physical space in this country did chose the Republican candidate for president, but these states are the least occupied and represent a fraction of the population. Likewise, the blue areas voted against the current elected president and are physically smaller in terms of geography. In terms of population, they are huge. When the Electoral College map presents votes

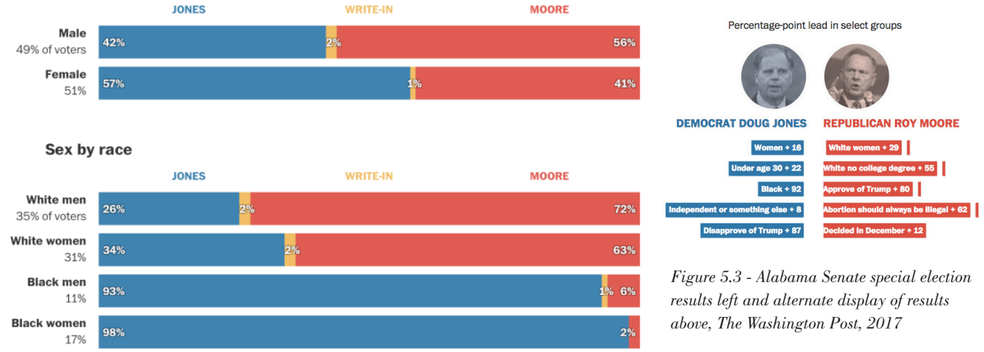
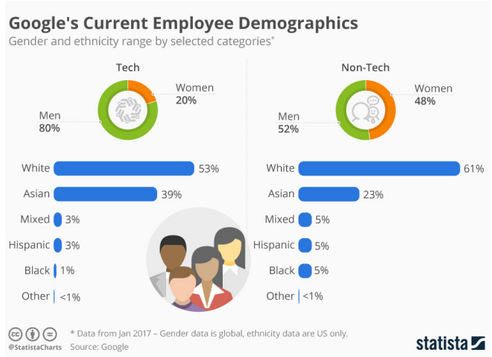
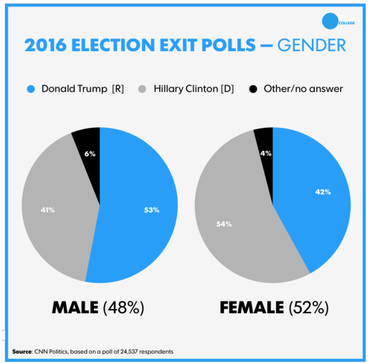
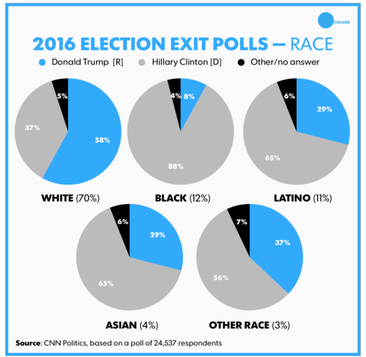


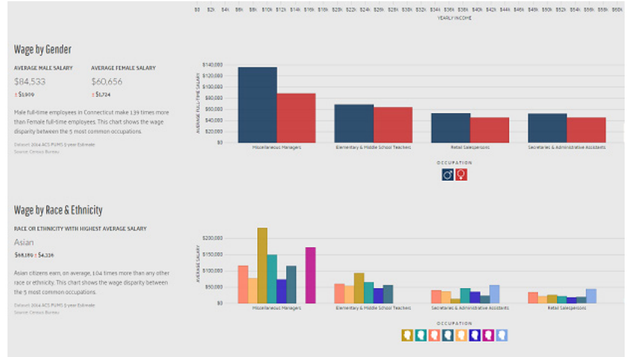
Figure 5.3 - Alabama Senate special election results left and alternate display of results above, The Washington Post, 2017

Figures 5.4 - Various examples of data reported with men before women and/ or white before black.









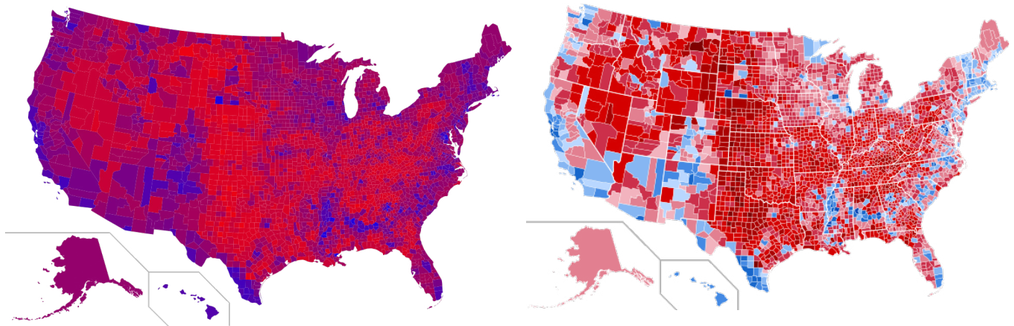


Figure 5.15 - Two current election results maps which utilize a representation based on land, results shown for 2016 Presidential election

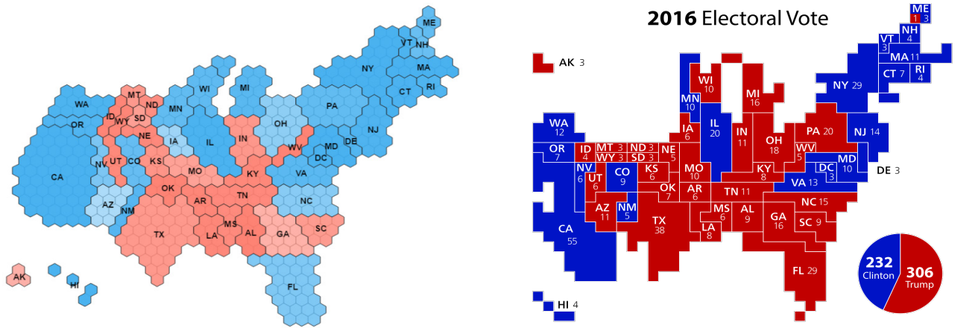


Figure 5.15 - Two proposed potential alternatives to the existing Electoral College map that focus more on population than land.

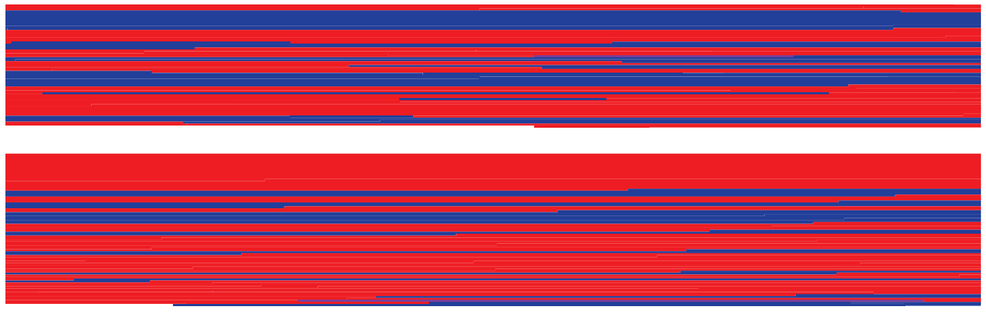


Figure 5.15 - Top, Election Results based on population of state. Bottom, Election results based on land mass of state. Created by author, 2016

by space it obscures our democratic electoral system that chooses a president by population and may influence voting patterns on election days. This example of visual space perpetuates a bias of geographical space, but other maps are possible.

Despite being cited as misleading, we continue to use the current Electoral College map as the visualization of election results. Other versions show results by major cities to demonstrate the voting patterns of heavily populated areas. The metro areas of Los Angeles, Chicago, and New York City account for over 14% of the entire country's population and occupy a minimal amount of physical space. The Electoral College map, however, is based on land. States such as Nebraska, Wyoming, and Alaska, though vast in size, lack the populations. Visual representations of cities, rather than states, would present a more accurate depiction of voting results. The Electoral College map grossly distorts the data and has been used by conservatives to influence final election results. Designers such as I offered a range of possibilities for conceiving a new Electoral map. Most attempted to resolve the relationship between land and population. My design offers a geographically neutral interpretation. States are not identified. Graphic like mine would refocus the topic on sheer numbers instead of land mass and stop visually distorting the information in the conversation.

Our predominant world map design tells the story of western dominance rather than the story of the actual world. On the Mercator projection, Greenland's size appears equal to that of Africa. In reality, Africa is fourteen times the size of Greenland. Europe appears slightly larger than South America. In reality, South America is nearly twice the size of Europe. (Business Insider 2018) In both cases the maps reflect ideas of dominance and the perception of civilized countries base on awarded size, rather than actual size. Maps like the Gall-Peters projection provide more accurate geographical representations, but the Mercator projection dominates our visual associated with the world and the nations that hold world power.

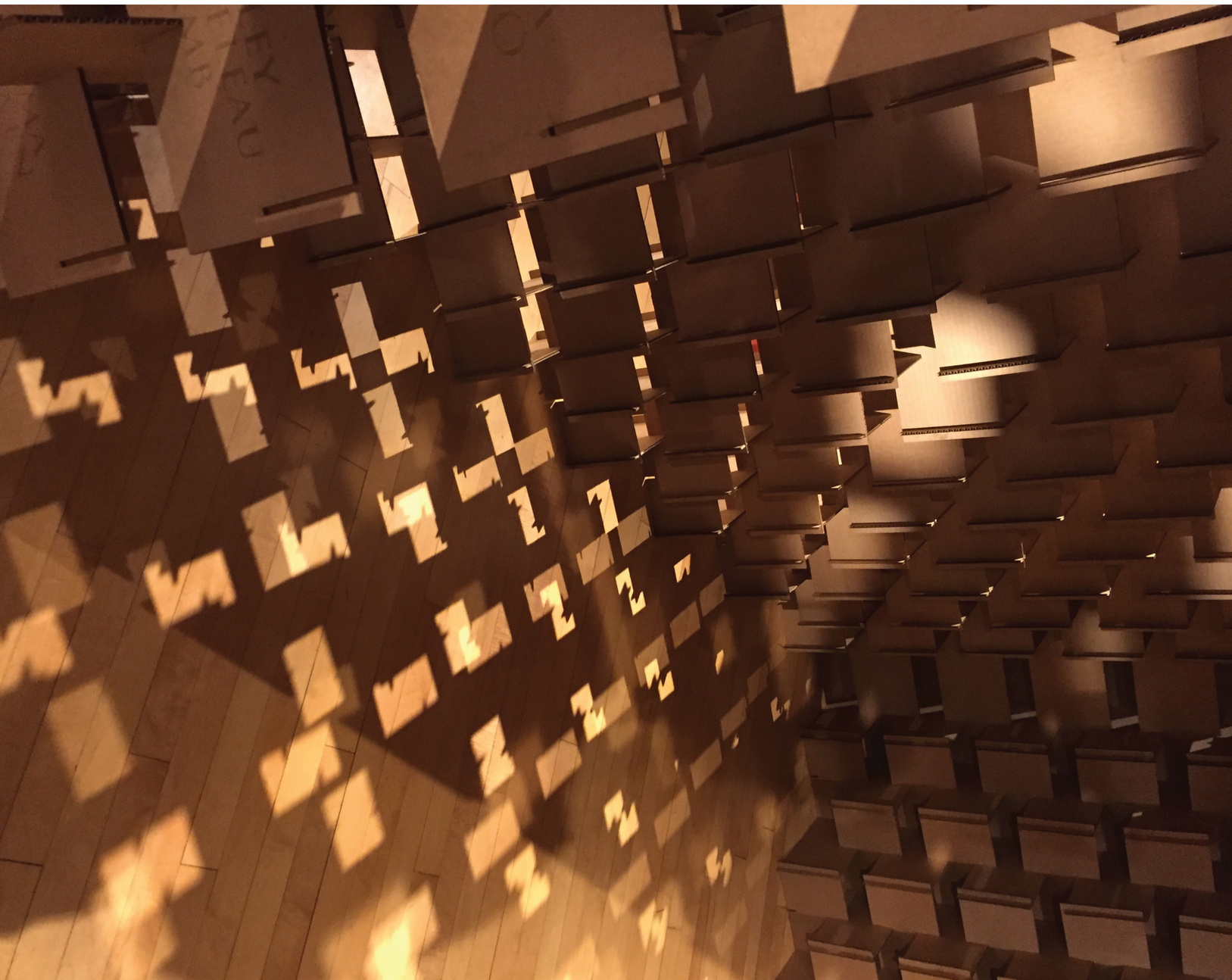
Space or landmass is associated with dominance and maps that support the ideology are celebrated, supported, and showcased.

Maps affect our lives and perception of the world. They allow us to visualize information that might otherwise be obtuse by providing a visual interpretation of data that is often a strong reflection of the biases and stories of the creators. Maps can distort, limit, or recast a story to celebrate one group over another. However, a map's power may also be a means to visually display truth about the world when designers make the conscious effort to challenge dominant ideologies. As designers, we need to consider the power a map provides and use this power responsibly to display information and tell the actual story instead of the story we (or those we work for) want to tell. When we confront the impact of visualize data in our designs we have the power to challenge existing cultural biases.

Design must confront the biases our work perpetuates and reinforces through the placement of information and visual hierarchy. We shape bias and affect cultural perceptions with the visuals we create. Choices viewed as inconsequential have an impact on our perceptions of the culture and imbue groups with power and status over others. By accepting our own biases, we work to be more conscious of the impact and long-term consequences of our design decisions. Harvard's Project Implicit which features tests a person can take related to a wide range of biases from gender and ethnicity to president and weapons. By taking tests like these, you can identify your own biases. A simple awareness of your own bias can help you begin to identify areas where you may be inclined to present material in a biased manner. Additionally, institutions and companies can conduct professional development sessions to help individuals identify their own biases and find ways to work to eliminate them. Designers should take the opportunity to explore any local professional development sessions on bias or to take one or more of Harvard's Project Implicit bias tests to begin to address their own biases.

INFORMATION CONSISTS OF DIFFERENCES THAT MAKE A DIFFERENCE.

Edward Tufte



Drafting a New Path for Design Through Heterarchy

In her Ted Talk, The Danger of a Single Story Chimamanda Ngozi Adichie explainswhy telling one story or one part of a story is dangerous It reduces us to stereotypes, caricatures, and one-dimensional people, and biases and marginalization result. Current design practices reinforce bias and limitstories. As we move further into the twenty-first century, design needs to explore how our basic structures and precepts contribute to the cultural construct to find a new approach to design that eliminates bias.

Our current world is steeped in vertical hierarchy where the space occupied determines the power of the individual or thing. For example, the penthouse on the top floor of the building is better than the ground floor studio or a general resides at the top of the chain of military command. In a vertical hierarchy one voice, style, right or reality reigns dominant over all possibilities.

Our cultural focus on vertical hierarchy contributes to a story that reinforces the bias

of one person or piece of information being more important and valued than the rest.. As Marilyn French observes about science in contrast to society:

"Scientists are discovering more fully each decade that nothing dominates. No planet dominates the cosmos, not part of a cell dominates it, no single person, not even the boss, dominates any situation. The drive to control that informs patriarchy is an unremitting, relentless drive to an invulnerability, impregnability (consider the root of this word), that does not exist on earth." (French 1993, 72)

Vertical hierarchy appears as another tool of the patriarchy to maintain power structures and the belief systems that support themA horizontal hierarchy allows for different ideas and a multiplicity of experiences to coexist on a plane of equality. A horizontal hierarchy allows many voices to shape the dialog and the possibility for reducing and eliminating bias with design.

Sheila Levrant de Brettville tackle this idea of the vertical hierarchy present in our visual culture. She highlights the inherent problems with our training as designers:

"Designers are taught to reduce ideas to their essence, but in fact that process too often results in the reduction of the ideas to only one of their parts. A more diffused manner of organizing material maintains enough complexity, subtlety, and ambiguity to entice the readers who normally dart away with someone else's encapsulated vision, rather than remaining long enough and openly with the idea to make it their own. As the community becomes used to ambiguity, complexity, subtlety in design and content, it will be more able to support the formation of individual conclusions, the expression of individual subjective opinions and will advocate the sharing of authority. For me this is a good: that Design can encourage ." (Levrant de Bretteville 2012, 313)

Levrant de Brettville created a magazine, Everywoman, where she strove to present a horizontal hierarchy by allotting each article and person equal space regardless of content, image, or element. Her aim gave each writer one large photo of herself and a two-page spread. No spread dominated any other. Each spread was linked visually. She sought to invite the reader to delve into the topics presented in each article and allow them to make their own judgments on the value and merit of the content, rather than having those judgements visually decided for them. (Levrant de Bretteville 2012, 314) Her attempt to tackle this idea and presentation of a non-vertical hierarchy in our visual culture has merit. She advanced design beyond the bias towards a vertical hierarchy of layout and enabled readers to think through the material without an imposed hierarchy.

Like her magazine's imperative, Sheila Levrant de Bretteville offers clear possibilities for a future path for design—one that involves breaking from the mainstream.

"Designing a structure that will encourage participating, non hierarchical non authoritarian relationships between the designer and the user, also results in visual and physical forms that are outside the mainstream of design as much as these ideas and attitudes are outside mainstream culture." (Levrant de Bretteville 2012, 315)

She adds:

"We must create visual and physical designs that project social forms but simultaneously we must create the social forms that will demand new visual and physical manifestations." (Levrant de Bretteville 2012, 315)

Levrant de Bretteville's work and design education program addresses these ideas by focusing on exploring feminine approaches to design. She conceives their potential to alter the design profession and cultural as a whole. Other scholars like Daphne Spain who research gender and space support Levrant de Bretteville's assertions.

"Space and status are linked in much the same way as theory and action. Just as theory both directs and is modified by practice, spatial arrangements produce and are produced by status distinctions. Space is organized in ways that reproduce gender differences in power and privilege. Status is embedded in spatial arrangements, so that changing space potentially changes the status hierarchy and changing status potentially changes spatial institutions." (Spain 1998, 233)

If space, gender, and status coexist currently in this potentially damaging relationship, then Levrant de Bretteville's explorations offer the best potential path for design to follow if we want to challenge patriarchal structures. Her ideas need to be incorporated into beginning design education across the board for maximum effectiveness.

Like Sheila Levrant de Bretteville, Cipe Pineles confronted traditional beliefs on the possibilities for design. Compared to Everywoman, Seventeen magazine's current incarnation seems like the farthest thing from a subversive act—a magazine dedicated to teen fashion and lifestyle advice seems to support the social construction of gender, rather than challenge it. However, in its early years when Helen Valentine served as editor-in-chief and Cipe Pineles worked as the art director, the magazine demonstrated the power of the teenage consumer by featuring notable writers and artists. By respecting their audience on an intellectual level, Valentine and Pineles challenged the mainstream perception of female teenagers and their interests. Valentine and Pineles interacted with the teenage women who read their magazine as fully formed individuals and radically challenged the culturally held view of what a teenage girl was and where her interests were "suppose to" be. Today's incarnation of the magazine is Teen Vogue that picked up the charge for challenging, subverting, and redefining the teenage girl. Subversion is typically defined as advocating the overthrow or destruction of government or cultural institution and thought of as acts that are loud, noticeable, and spark awareness and change. However, historically subtle acts of subversion are also effective such as Rosa Park's refusal to sit at the back of the bus or early lunch counter sit-ins in the South. If we hope to eliminate bias in designs, we need these subversive voices and acts to create the redefinition that women like Valentine and Pineles achieved.

Design may seem powerless to contribute to gender equity. The design of a book, magazine, or logo seems to lack connection to broader cultural issues. However, if we break down how these visuals establish a pattern and representation that affects perception, the reinforcing cultural stereotypes and cultural norms are clear. A study at Harvard University led by Susan Carey looked at how eleven-month-olds already understood that bigger was better and assessed that it had nothing to do with language instead she believed it was something biological to humans separate from learned behavior. Language is not the only indicator of comprehension of concepts. Colin Ellard agrees in his summation of the study's results:

"And although we might not like to think of ourselves as taking part in daily duels with larger and more fearsome members of our species for possession of scarce resources, it seems that this understanding of the power of size in social relationships is something that is instilled in us before we can speak." (Ellard 2015, 157)

Connecting to visual culture was beyond the scope of the study. However, it would be interesting to further Ellard's work to explore the amount of visual culture the eleven-month-old children had consumed. Anyone who spent time with children during their formative years realizes how sponge-like children are. In my early years of babysitting, I witnessed some instances of children picking up skills with limited exposure including one elementary school aged girl remembering how I fixed the family computer after her brother broke it when the problem arose again. I have also witnessed little girls talking about their weight even when I know their mothers purposefully avoid focusing on weight in the household. If visual culture sends messages on value, children who consistently see such messages internalize them. Visual culture indoctrinates cultural values and a further pursuit of this would add to the research of is effects. Ellard supports this thinking:

"There is little doubt that the impulse to build large, expensive structures whose size, might, and decoration far exceed their function as buildings springs in part from the same kinds of motivations that cause birds and other animals to build elaborate structures in an attempt to woo mates or that cause the largest members of a social group of animals to achieve social dominance while rarely needing to use teeth or claws to defend their right to occupy the top dominance hierarchy. In all such cases, the real idea is to use size and investment to demonstrate might and thereby to promote the preservation of social order." (Ellard 2015, 157)

Our use of visual hierarchy reinforces size-based biases. By making things larger and more prominent in design, we reinforce the connection between

the amount of space something occupies and its importance.

Designers can change this by imagining new ways to display information that better represents a horizontal hierarchy and remain conscious of a given decision's impact. As designers we have the power to change the world no matter what David Carson may think. Becoming aware of how we display information is an important first step. While Edward Tufte doesn't address bias specifically, he does explore how the display of information matters.

"*Evidence that bears on questions of any complexity typically involves multiple forms of discourse. Evidence is evidence, whether words, numbers, images, diagrams, still or moving. The intellectual tasks remain constant regardless of the mode of evidence: to understand and to reason about the materials at hand, into appraise the quality, relevance, and integrity.*" *(Tufte, 9)*

Our decisions may seem inconsequential but they have broad reach and impact. Our choices of color may reinforce the idea that girls like pink or the absence of a particular ethnicity in advertising may indicate their lesser status within our culture. On the surface, these concerns may seem trivial but they reveal the broader cultural practices that maintain dominance and reinforce oppression. By questioning some of the core principles or underlying mechanisms that may mistakenly seem small and inconsequential, our actions resist and challenge.

Design does not exist in a vacuum. Faculty must open the discussion on the power and potential of design as one method to invite students into exploration as they move forward as professionals. Safe design must be challenged and taught within the educational sphere. Risky design, even if bad, tests the possibilities and potential of a discipline to expand both the scope and the legitimacy of the profession. However, the sterile, controlled environment of a classroom cannot alone teach design to the next generation of designers. As educators we must also push and test boundaries within the classroom even if such pedagogical work makes administration uncomfortable. Design is a living, breathing organism that requires far more than the recitation of the past and a knowledge of the basics. When we're able to make small changes in the classroom and in the curriculum, we're doing the work to teach new designers to push thinking forward by testing the boundaries that seek to contain them and push the discipline forward.

Weaving provides insight into the possibilities for horizontal hierarchy. The construction of the weaving yields a product that exists with two stories—a front and a back. The back serves as an alternate version or story of the weaving. The weaving is open to multiple interpretations and the process replicates the cooperative efforts of most modes of female production. The weft and warp well going in opposing directions come together in a seamless harmony. Neither the warp nor the weft are elevated over the other. They work together to hold the weaving together securely. Much like the fabric we wear every day, it's hard often to identify one thread from the other in a successful weaving. Design needs to move towards this more participatory creation process rather than continue down the singular vertical hierarchy process. Fabric also poses an interesting metaphor. Individual threads are the separate parts that make up fabric, but we can think of fabric as one whole to inspire our designs. Instead of thinking of design as a bunch of separate parts, when we imagine it as a whole this enables us to consider how threads work together to create a surface that adorns our body and carries messages in that adorn. The best design, like the best fabric, moves beyond the surface or what threads are used towards how those threads come together for the final construction. When design follow a similar path to eliminate bias it makes space for a broader set of voices.

Horizontal hierarchy is one solution this I've explored as a tool to challenge oppression. Another solution is approaching design through the concept of heterarchy. Heterarchy, a term first used by Warren McCulloch in context of the processes of human brains, offers an unranked, multiple ranked, or hierarchical approach

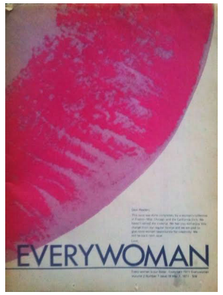


Figure 6.1 - Everywoman cover spread, Sheila Levrant de Bretteville

Figure 6.2 - Everywoman Magazine spread, Sheila Levrant de Bretteville

to the elements of an organization. Heterarchy could be compared to the game, Rock Paper Scissors, or U.S. Constitution's checks and balances. Heterarchy allows for circumstances where one element may be superior to another but in others, inferior. (Ogilvy, 2016) The idea resonates with me. For women, life choices are more often ranked, than presented as each holding equal value. Heterarchy offers a solution where multiple genders and races coexist without hierarchy, exclusion, or dominance. McCulloch's original observations rooted in biology demonstrate the possibility of heterarchy working and thriving when we turn from hierarchical structures to ones that embrace difference.

Heterarchy offers a solution to eliminate bias by valuing all existences and perspectives as equally valid. In design, this has occurred to some extent. No design movement has dominated since postmodernism. Instead, multiple styles co-exist with individual designers choosing the ones that best suit aesthetics and design goals, such as using Hobo or Helvetica. Heterarchy says both fonts co-exist as equal possibilities for producing a quality design. One path forward towards encouraging solutions like heterarchy is the work we do in the classroom. By discussing heterarchy and hierarchy in our courses the next generation of designers will be invited to question the ingrained hierarchical system of design. The path forward for design starts by discussing heterarchy as an alternate structure for information. Much like all species evolve as conditions change, design evolves as the circumstances and structures change. By addressing the issues of bias in design, the evolution towards necessary change begin.

Conclusion

Space proves a term used within design and a consideration for designers as part of broader cultural forces. David Carson may be correct that design cannot save the world but designers can start conversations that do. Designers choose either to reflect the current societal values or actively advocate for changing the cultural representation of gender and ethnicity. Design has the power to create change. As we design, we must ask ourselves how our design decisions contribute to the problem or are one solution. The space on a page we give to a particular person, place, or idea indicates its importance within our current culture. We can choose how much space or visual importance one group occupies. In our increasingly visual culture, these decisions have reaching consequences beyond the display of the information. They enforce cultural and personal biases or confront them. They help determine whether we tell a biased story or an equitable one. As I conclude, I want to look at our possible paths forward as designers to help use space in a way that works to prevent the bias present within our culture.

We must ask ourselves how our design choices affects our message and how it reinforces others. How do our choices contribute to the biases already present in our society? Are we making decisions to reinforce the current message or are we challenging them? Are there alternate ways to accomplish our goals and allow for more equitable representation? By consciously considering these questions, our work as designers has the potential to instill positive change in our jobs and in the culture. We know our job is more than aesthetics and we must evaluate how we change marginalizing cultural forces.

Design advocates for social responsibility. However, unlike the First Things First Manifesto, Milton Glaser's 12 Steps on the Road to Hell, or the growing number of books on social responsibility, social responsibility starts before the clients we choose, the projects we work, and the causes we support. Social responsibility starts by examining the building blocks that

continue to support a rethinking. We can do this in our classrooms, and we can do this in the designs we create. While working for morally corrupt clients is far from good, misusing space for even the highest caliber clients produces damaging results. Cipe Pineles provides a historical example of this possibility in her role as Art Director at Seventeen where she used design to advanced the idea of teenage women as fully developed people. The information designers for the Washington Post could have worked to develop a more nuanced graphical display of the election results that better portrayed the situation especially since the profession talks heavily about the misrepresentation or distortion of information. I fully realize some designers may not have the power or opportunity for challenging their bosses given very real economic realities, but those with the ability and power have a responsibility to do so. The precepts of design advocate for a hierarchical use of space that further perpetuates cultural constructs that perpetuate gender, ethnicity, or sexuality

inequalities. For example, consistently listing white and male first emphasizes the superiority of white and male on subconscious level reaffirming the unconscious biases present within our culture. If we want to exercise social responsibility, we as designers must challenge the hierarchical structures present in our visual culture that are responsible for marginalizing genders, ethnicities, and sexuality outside of the mainstream.

Heterarchy offers the potential for design to make strides in eliminating bias by working to eliminate the hierarchical structures of design. Heterarchy introduces possibilities into design for multiple interpretations of information no longer bound by the singular interpretation of our existing hierarchical structures. Designers must embrace multiplicities and their potential for equality. By understanding that different perspectives and realities deserve equal treatment, we create a more equitable design

profession and culture. Heterarchy offers the potential to realize these lofty goals.

As designers and especially as educators, we need to think critically about the structures we create and teach. We need to think about why we continue to perpetuate systems that keep bias a part of our visual culture, therefore, keep bias a part of our cultural reality. How can we as designers do our part to break down these structures when we have the opportunity and power to do so? By merely asking "Am I doing this because this is how it has always been done or am I doing this because this is the most equitable solution" we can begin to change our visual culture for the better. As educators of the next generation of designers, we need to push them to explore solutions beyond the ones that exist today. Whether one of my proposed ideas of heterarchy or a version of horizontal hierarchy or even another solution not yet conceived of yet, we need to keep pushing for new options in our visual language to help

eliminate the bias caused by how we use space. Designers have a responsibility to help find these solutions for our visual language and break our connections to the destructive vertical hierarchy embedded within our culture.

In my work my time at the Vermont College of Fine Arts, I explored the connections between space and gender. I played with ideas of scale as well blurred the lines between traditionally feminine and masculine modes of making. My final thesis exhibition looks to subvert expectations of scale and execution about a consistently feminine mode of making to expose the bias that exists both in the expectations for embroidery as well in the bias demonstrated with the chosen language. The language represents biased example sentences for words defined in the dictionary. Much like the demonstrated bias to list men before women in our visual culture, the dictionary consistently uses female pronouns for words like shrill, bossy, loose, and rabid while using male pronouns for words like successful, intelligent, and successful. By mixing scale and treatment, I hope to call attention to this unconscious bias perpetuated by these pronoun choices. Previously, I explored ideas related to scale, representation, public versus private, and subverting a mode of making for alternate purposes in hopes to begin to call attention to the issues related to women with our broader culture and within design. My hope with my research and my making is to start the conversation about the broader issue of how bias exists in our culture specifically related to the idea of the use of space. While this conversation may have no clear end, my hope is by simply pointing out these forms of bias that we tend to be blind to that through this awareness can lead to a better understanding of structures at play within our culture and our broader culture that keep some people at a lesser status than others. My work demonstrates the space we occupy does tie to the power we have within the culture, and hierarchical spaces can be especially damaging by perpetuating the bias of these spaces.

Bibliography

Ahmed, Sara. Living a feminist life. Durham, NC: Duke University Press, 2017.

Aicher, Otl. “Design & Philosophy.” In Analogous and Digital, 75-92. Berlin: Ernst & Sohn, 2015.

“Alabama Senate special election results: Who will succeed Jeff Sessions?” The Washington Post. Accessed January 29, 2018. https://www.washingtonpost.com/special-election-results/alabama/?utm_term=.32e26e78a2dc.

Albers, Anni. On Designing. New Haven: Pellango, 1959.

Albers, Anni, and Brenda Danilowitz. Anni Albers: Selected Writings on Design. Hanover: University Press of New England, 2000.

Alexander, Christopher. Notes on the synthesis of form. Cambridge, Mass.: Harvard Univ. Press, 2002.

Alexander, Christopher, Sara Ishikawa, and Murray Silverstein. A pattern language: towns, buildings, construction. New York, NY: Oxford Univ. Pr., 2010.

Anderson, Gail. Reinventing the museum: the evolving conversation on the paradigm shift. Lanham (md.): Altamira Press, 2012.

Anscombe, Isabelle. A Woman’s Touch: Women in Design from 1860 to the Present Day. New York, NY: Viking Penguin, 1984.

Ardener, Shirley. Women and space: ground rules and social maps. Oxford: Berg, 1997.

Arvas, Maina, and Carin Goldberg. Hall of Femmes: Carin Goldberg. Stockholm: Oyster Press, 2010.

Bachelard, Gaston, Maria Jolas, Mark Z. Danielewski, and Richard Kearney. The poetics of space. New York: Penguin Books, 2014.

Bahamón, Alejandro, and Ana Mariá Álvarez. Light color sound: sensory effects in contemporary architecture. New York: W.W. Norton & Co., 2010.

Bank, Mirra. Anonymous Was a Woman. New York: St. Martin's Press, 1979.

Bayles, David, and Ted Orland. Art & Fear: Observations on the Perils (and Rewards) of Artmaking. Santa Barbara: Capra Press, 1993.

Bennett, Audrey. Design studies: theory and research in graphic design. New York: Princeton Architectural Press, 2006.

Benz, Peter. Experience design: concepts and case studies. London: Bloomsbury Academic, Bloombury, 2015.

Bolick, Kate. Spinster: making a life of one's own. New York: Crown Publishers, 2015.

Bonet, Llorenç. Exhibition design. Gloucester, MA: Rockport, 2006.

Bouabana, Samira, and Angela Tillman Sperandio. Hall of Femmes: Ruth Ansel. Stockholm: Oyster Press, 2010.

Bouabana, Samira, Angela Tillman Sperandio, and Sarah Clyne Sundberg. Hall Of Femmes: Janet Froelich. Stockholm: Oyster Press, 2013.

Bouabana, Samira, and Angela Tillman. Sperandio. Hall of Femmes: Lella Vignelli.Stockholm: Oyster Press, 2013.

Bouabana, Samira, Angela Tillman Sperandio, and Maina Arvas. Hall of Femmes: Tomoko Miho. Stockholm: Oyster Press, 2013.

Bouabana, Samira, and Angela Tillman Sperandio. Hall of femmes: Barbara Stauffacher Soloman. Stockholm: Oyster Press, 2016.

Breuer, Gerda, and Julia Meer. Women in Graphic Design 1890-2012 = Frauen Und Grafik-Design. Berlin: Jovis, 2012.

Brownie, Barbara. Type Image. Berkeley, CA: Ginko, 2011.

Coles, Alex. The transdisciplinary studio. Berlin: Sternberg Press, 2012.

De Botton, Alain. The architecture of happiness. New York, NY: Vintage International, 2008.

Derrida, Jacques, and Barry Stocker. Jacques Derrida: basic writings. New York, NY: Routledge, 2008.

Diamond, Judy, Michael Horn, and David H. Uttal. Practical evaluation guide: tools for museums and other informal educational settings. Lanham: Rowman & Little eld, 2016.

Dowler, Lorraine. Gender and landscape: renegotiating morality and space. London: Routledge, 2006.

Ellard, Colin. Places of the Heart The Psychogeography of Everyday Life. Erscheinungsort nicht ermittelbar: Bellevue Literary Press, 2015.

Ellis, Estelle, and Carol Burtin Fripp. Cipe Pineles: Two Remembrances. Rochester: RIT Cary Graphic Arts, 2005.

Erwine, Barbara. Creating sensory spaces: the architecture of the invisible. New York: Routledge, 2017.

Foucault, Michel. "Of Other Spaces, Heterotopias." Architecture, Mouvement, Continuité 5 (1984): 46-49.

Foucault, Michel, Colin Tr. Gordon, and Colin Gordon. Power/Knowledge. New York: Harvester Wheatsheaf, 1980.

Gamio, Lazaro. "Election maps are telling you big lies about small things." The Washington Post. November 1, 2016. Accessed January 29, 2018. https://www.washingtonpost.com/graphics/politics/2016-election/how-election-maps-lie/.

Gomez-Palacio, Bryony, and Armin Vit. Women of Design: Influence and Inspiration from the Original Trailblazers to the New Groundbreakers. Cincinnati, OH: HOW Books, 2008.

Gompertz, Will, John Simpson, Chloe Aridjis, Ólafur Elíasson, Lila Azam Zanganeh, Will Wiles, Alain De Botton, Leanne Shapton, Sheila Heti, Ted Mineo, James Bridle, Peter Turchi, Valeria Luiselli, Adam Thirlwell, Tao Lin, Geoff Dyer, Joe Dunthorne, and Denis Wood. Where You Are: A Book of Maps That Will Leave You Feeling Completely Lost. London: Visual Editions, 2013.

"Good". "Hear the voices of women in design leadership roles." Kerning the Gap. Accessed January 29, 2018. http://www.kerningthegap.com/.

Graphic means: a history of graphic design production. Directed by Briar Levitt. United States: Tugg, 2017. DVD.

Harmon, Katharine A. You Are Here: Personal Geographies and Other Maps of the Imagination. New York: Princeton Architectural Press, 2004.

Haverkamp, Michael. Synesthetic design: handbook for a multisensory approach. Basel: Birkhauser, 2013.

Hein, Hilde S., and Carolyn Korsmeyer. Aesthetics in feminist perspective. Bloomington, IN: Indiana Univ. Press, 1993.

Heller, Steven. “Cult of the Ugly.” In Looking Closer: Critical Writings on Graphic Design, 155-59. New York: Allworth Press, 1994.

Herod, Andrew. Scale. London: Routledge, 2011.

Hirst, Paul. Space and Power: Politics, War and Architecture. Oxford: Polity, 2005.

Illich, Ivan. Tools for Conviviality. New York: Harper & Row, 1973.

Ilyin, Natalia. Blonde Like Me: The Roots of the Blonde Myth in Our Culture. New York: Simon & Schuster, 2000. Print.

Ilyin, Natalia. Chasing the Perfect: Thoughts on Modernist Design in Our Time. New York: Metropolis Books, 2006.

Iwamoto, Lisa. Digital Fabrications: Architectural and Material Techniques. New York: Princeton Architectural Press, 2010.

Jackson, Paul. Cut and Fold Techniques for Promotional Materials. Laurence King, 2013.

Johannesson, Ika, and Lillian Bassman. Hall of Femmes: Lillian Bassman. Stockholm: Oyster Press, 2010.

Kalbach, Jim. Mapping experiences: a guide to creating value through journeys, blueprints & diagrams. Beijing: O’Reilly, 2016.

Kant, Immanuel. Critique of Pure Reason, translated by Paul Guyer and Allen Wood. Cambridge: Cambridge University Press, 1998.

Keedy, Jeff. “Zombie Modernism.” Emigre, no. 34 (1995): 17-31.

Kirkham, Pat. Women Designers in the USA, 1900-2000: Diversity and Difference: Jacqueline M. Atkins. New Haven, CT: Yale UP, 2000.

Koren, Leonard. Wabi-Sabi: for artists, designers, poets & philosophers. California: Imperfect Publishing, 2008.

Koren, Leonard. Wabi-sabi: further thoughts. Point Reyes, CA: Imperfect Publishing, 2015.

Krishna, Golden. Best Interface Is No Interface: The Simple Path to Brilliant Technology. San Francisco, CA: New Riders, 2015.

Kruger, Sylvie. Textile architecture. Munich: Jovis, 2009.

Lefebvre, Henri, and Donald Nicholson-Smith. The production of space. Malden, MA: Blackwell, 2009.

Lorde, Audre. Sister outsider: essays and speeches. Berkeley, CA: Crossing Press, 2015.

Mari, Anthony Di. Conditional design: an introduction to elemental architecture. Amsterdam: BIS Publishers, 2016.

Massey, Doreen B. Space, place, and gender. Minneapolis, Minnesota: University of Minnesota Press, 2009.

Massey, Doreen. For space. Los Angeles: SAGE, 2015.

McArthur, Meher, and Robert J. Lang. Folding paper: the infinite possibilities of origami. Tuttle Publishing, 2013.

McQuaid, Matilda, Philip Beasley, Alyssa Becker, and J. W. S. Hearle. Extreme textiles: designing for high performance. London: Thames & Hudson, 2005.

Mi-young, Pyo. Construction and design manual: architectural models 1. Berlin: DOM Publishers, 2012.

Mi-young, Pyo. Construction and design manual: architectural models 2. Berlin: DOM Publishers, 2012.

Miró, Eva Pascual i, Pere Pedrero. Carbonero, and Ricard Pedrero. Coderch. Advanced architectural modelmaking. New York, NY: W.W. Norton & Co., 2011.

Mogel, Lize, and Alexis Bhagat. An Atlas of Radical Cartography. Los Angeles: Journal of Aesthetics & Protest Press, 2007.

Muller, Ulrike. Bauhaus Women. Paris: Flammarion, 2009.

Munari, Bruno, and Patrick Creagh. Design as Art. London: Penguin, 2008.

“National Museum of Women in the Arts.” Get the Facts | National Museum of Women in the Arts. Accessed January 29, 2018. https://nmwa.org/advocate/get-facts.

Newton, Isaac, Alexandre Koyré, and I. Bernard Cohen. Philosophiae naturalis principia mathematica. Cambridge: University Press, 1972.

Niranjana, Seemanthini. Gender and space: femininity, sexualization and the female body. New Delhi: Sage Publications, 2001.

Ody, Kenneth. Paper Folding & Paper Sculpture. Verplanck, NY: Emerson Books, Inc., 1982.

Ogilvy, Jay. “Heterarchy: An Idea Finally Ripe for Its Time.” Stratfor. February 03, 2016. Accessed March 19, 2018. https://worldview.stratfor.com/article/heterarchy-idea-finally-ripe-its-time.

Parker, Rozsika. The Subversive Stitch: Embroidery and the Making of the Feminine. London: Women’s Press, 1984.

Pollard, Alexandra. “Why are only women described as ‘confessional’ singer-songwriters?” The Guardian. April 09, 2015. Accessed March 18, 2018. https://www.theguardian.com/music/2015/apr/09/why-are-only-women-described-as-confessional-singer-songwriters.

Remington, R. Roger., and Barbara J. Hodik. Nine Pioneers in American Graphic Design. Cambridge, MA: MIT Press, 1989.

Rothschild, Joan, and Alethea Cheng. Design and feminism: re-visioning spaces, places, and everyday things. New Brunswick, NJ: Rutgers University Press, 1999.

Rudalevige, Andrew. "Analysis | Why on earth do we even have an electoral college anyway?" The Washington Post. November 08, 2016. Accessed January 29, 2018. https://www.washingtonpost.com/news/monkey-cage/wp/2016/11/08/wait-why-do-we-even-have-an-electoral-college/?utm_term=.34a39e3ba77a.

Sack, Robert David. Conceptions of space in social thought: a geographical perspective. Minneapolis, MN: University of Minnesota Press, 1981.

Sanders, Elizabeth B.-N., and Pieter Jan Stappers. Convivial Toolbox: Generative Research for the Front End of Design. Amsterdam: BIS, 2012.

Schenone, Laura. A thousand years over a hot stove: a history of American women told through food, recipes, and remembrances. New York, NY: W. W. Norton, 2003.

Scotford, Martha. Cipe Pineles: A Life of Design. New York: W. W. Norton, 1999.

Simon, Nina. The participatory museum. Santa Cruz, CA: Museum 2.0, 2010.

Smith, T'ai. Bauhaus Weaving Theory: From Feminine Craft to Mode of Design. Minneapolis (MN): University of Minnesota Press, 2014.

Spain, Daphne. Gendered spaces. Chapel Hill: Univ. of North Carolina Press, 1998.

Sterbenz, Christina. "The Most Popular Map Of The World Is Highly Misleading." Business Insider. December 12, 2013. Accessed January 29, 2018. http://www.businessinsider.com/mercator-projection-v-gall-peters-projection-2013-12.

Stickdorn, Marc, and Fergus Bisset. This is service design thinking: basics - tools - cases. Amsterdam: BIS Publishers, 2015.

Stolzl, Gunta, Monika Stadler, and Yael Aloni. Gunta Stolzl: Bauhaus Master. New York: Museum of Modern Art, 2009.

Swanson, Ana. "5 ways of redrawing the U.S. electoral map that actually make sense." The Washington Post. December 19, 2016. Accessed January 29, 2018. https://www.washingtonpost.com/news/wonk/wp/2016/12/19/five-ways-of-redrawing-the-map-that-would-change-the-2016-election/?utm_term=.1f192488e203.

TEDTalks: Chimamanda Adichie--The Danger of a Single Story. TED, 2009. Accessed December 09, 2017. https://www.ted.com/talks/chimamanda_adichie_the_danger_of_a_single_story.

Theophano, Janet. Eat my words: reading women's lives through the cookbooks they wrote. New York: Palgrave, 2002.

Tuan, Yi-Fu. Space and place: the perspective of experience. Minnesota: University of Minnesota, 2014.

Tufte, Edward R. Envisioning information. Cheshire, CT: Graphics, 1990.

Tufte, Edward R. Visual explanations: images and quantities, evidence and narrative. Cheshire, CT: Graphics Press, 1998.

Tufte, Edward R. Beautiful Evidence. Cheshire: Graphics Press, 2006.

Vianello, Mino, and Elena Caramazza. Gender, space and power: a new paradigm for the social sciences. London: Free Association Books, 2005.

Villagomez, Nikki. Culture + Typography: How Culture Affects Typography. Cincinnati: HOW, 2015.

Vyzoviti, Sophia. Folding Architecture: spatial, structural and organizational diagrams. Amsterdam: BIS Publishers, 2016.

Weber, Nicholas Fox, Pandora Tabatabai Asbaghi, and Anni Albers. Anni Albers. New York, NY: Guggenheim Museum Publications, 1999.

"Women in the U.S. Congress 2018." CAWP | Center for American Women and Politics. Accessed January 29, 2018. http://www.cawp.rutgers.edu/women-us-congress-2018.

Yamada, Sadami, and Kiyotada Ido. New dimensions in paper craft. London: Sir Isaac Pitman, 1966.

Image List

Figure 1.1 - Environmental graphics designed for Achievement First charter school in Clinton Hill, Brooklyn. Digital image. The Great Discontent. November 19, 2013. Accessed March 01, 2018. http://thegreatdiscontent.com/interview/paula-scher.

Figure 1.2 - Paula Scher, (Artist), American, born 1948, Ambassador Arts, Inc., New York, (Printer). 1994. The Diva is Dismissed. Graphic Design. Place: Museum of Modern Art (New York, N.Y.). http://library.artstor.org.vcfal.idm.oclc.org/asset/MOMA_10450003.

Figure 1.3 - Paula Scher, (Artist), American, born 1948. 1995. Bring in 'Da Noise Bring in 'Da Funk. Graphic Design. Place: Museum of Modern Art (New York, N.Y.). http://library.artstor.org.vcfal.idm.oclc.org/asset/MOMA_12810004.

Figure 1.4 - Barbara Stauffacher Solomon beside an enamel exit sign at Lawrence Halprin's house at The Sea Ranch. Digital image. www.creativereview.co.uk. November 4, 2017. Accessed March 01, 2018. https://www.creativereview.co.uk/barbara-stauffacher-solomon/?mm_5abb172fcab43=5abb172fcabe7.

Figure 1.5 - Alinder, Jim. The influential Sea Ranch Tennis Club supergraphics by Barbara Stauffacher Solomon. Digital image. www.curbed.com. January 03, 2018. Accessed March 01, 2018. https://www.curbed.com/2018/1/3/16842200/barbara-stauffacher-solomon-sea-ranch-supergraphics.

Fig. 1.6 - The Sea Ranch, 1965. Digital image. www.creativereview.co.uk. November 4, 2017. Accessed March 01, 2018. https://www.creativereview.co.uk/barbara-stauffacher-solomon/?mm_5abb172fcab43=5abb172fcabe7.

Fig. 1.7 - Madere, John. Photo of Paula Scher. Digital image. The Great Discontent. November 19, 2013. Accessed March 01, 2018. http://thegreatdiscontent.com/interview/paula-scher.

Fig. 1.8 - Environmental graphics for Bloomberg L.P.'s headquarters located on the east side of Midtown Manhattan. Digital image. The Great Discontent. November 19, 2013. Accessed March 01, 2018. http://thegreatdiscontent.com/interview/paula-scher.

Fig. 2.1 - Artist unidentified. 1930-1940. Dresden Plate Quilt. Place: American Folk Art Museum, Gift of Cyril Irwin Nelson. http://library.artstor.org.vcfal.idm.oclc.org/asset/AAFOLKAIG_10313142988.

Fig. 2.2 - Artist unidentified. c.1890. Hired Hand's Quilt. http://library.artstor.org.vcfal.idm.oclc.org/asset/ARTSTOR_103_41822001389855.

Fig. 2.3 - Harriet Powers, American, 1837-1911, North American; American. 1895-98. Pictorial Quilt. Textiles. Place: Museum of Fine Arts, Boston, Boston, Massachusetts, USA, Bequest of Maxim Karolik, 64.619, http://www.mfa.org/. http://library.artstor.org.vcfal.idm.oclc.org/asset/AMICO_BOSTON_103839800

Fig. 2.4 - Ringgold, Faith. 1986. Purple Quilt. http://library.artstor.org.vcfal.idm.oclc.org/asset/ARTSTOR_103_41822001399052.

Fig. 2.5 - Bauhaus. 1927-8. Silk Wall Hanging prod. at Dessau by Anni Albers. http://library.artstor.org.vcfal.idm.oclc.org/asset/ARTSTOR_103_41822001384583.

Fig. 2.6 - Gunta Stölzl (German, 1897 - 1983). 1922-1923. Tapestry. textile. Place: Harvard Art Museums, Busch-Reisinger Museum, Association Fund. http://library.artstor.org.vcfal.idm.oclc.org/asset/AWSS35953_35953_29357754.

Fig. 2.7 - Otti Berger (German, 1898-1944) Bauhaus (German). mid 1930s. Book. Textiles-Sample Books. Place: The Metropolitan Museum of Art, http://www.metmuseum.org. http://library.artstor.org.vcfal.idm.oclc.org/asset/SS7731421_7731421_11545739.

Fig. 2.8 - Gertrud Grunow. Digital image. 100 Years of Bauhaus. Accessed March 01, 2018. https://www.bauhaus100.de/en/past/people/masters/gertrud-grunow/.

Fig. 2.9 - Barbara Kruger. 1994. Untitled. Sculpture and Installations, Photographs. http://library.artstor.org.vcfal.idm.oclc.org/asset/LARRY_QUALLS_1039904192.

Fig. 2.10 - Context, Vinyl Installation, Flint, MI. Personal photograph by author. 2016.

Fig. 2.11 - Context, Vinyl Installation, Flint, MI. Personal photograph by author. 2016.

Fig. 2.12 - Context, Vinyl Installation, Flint, MI. Personal photograph by author. 2016.

Fig. 2.13 - Context, Laser Carved Wood, Flint, MI. Personal photograph by author. 2016.

Fig. 2.14 - Context, Laser Carved Wood, Flint, MI. Personal photograph by author. 2016.

Fig. 2.15 - Context, Laser Carved Wood, Flint, MI. Personal photograph by author. 2016.

Fig. 2.16 - Context, Laser Carved Wood, Flint, MI. Personal photograph by author. 2016.

Fig. 2.17 - Context, Laser Carved Wood, Flint, MI. Personal photograph by author. 2016.

Figure 3.1 - Sarah Wyman Whitman, 1842-1904, North American; American. after 1894. Draped Female Figure. Paintings. Place: Museum of Fine Arts, Boston, Boston, Massachusetts, USA, Bequest of the Artist, 04.1723, http://www.mfa.org/. http://library.artstor.org.vcfal.idm.oclc.org/asset/AMICO_BOSTON_103829080.

Figure 3.2 - Mackintosh, Margaret Macdonald, 1864-1933. c.1900. Photo: Portrait. http://library.artstor.org.vcfal.idm.oclc.org/asset/ARTSTOR_103_41822000467926.

Figure 3.3 - Albers, Anni. 1954. Red and Blue Layers. Place: The Josef and Anni Albers Foundation. http://www.albersfoundation.org. http://library.artstor.org.vcfal.idm.oclc.org/asset/AALBERT_10311268002.

Figure 3.4 - Ethel Reed (American, 1874-after 1900) Published by: Copeland and Day. 1896. In Childhood's Country. Prints, Posters.

Figure 3.5 - Ethel Reed (American, 1874-after 1900) Published by: Lamson Wolffe & Co.. 1895. The House of the Trees and Other Poems by Ethelwyn Wetherald. Prints, Posters.

Figure 3.6 - Jane Atche. 1889. Job Cigarette Papers (Affiche Job papier à cigarettes). poster. Place: Musée des arts décoratifs, Paris. http://library.artstor.org.vcfal.idm.oclc.org/asset/ARMNIG_10313260099.

Figure 3.7 - Helen Dryden. 1-May-20. Woman walking under the snow, wearing a brown fur coat, matching hat and beige gloves. Background of cars and wayfarers. Publication: Vogue. http://library.artstor.org.vcfal.idm.oclc.org/asset/AWSS35953_35953_35715001.

Figure 3.8 - Helen Dryden. 15-Dec-21. Vogue black logo; Illustration of woman in red empire waist dress with black fur trim, holding a potted tree with a heart attached, and tossing a tree covered in jewelry out the window - HOLIDAY NUMBER Publication: Vogue. http://library.artstor.org.vcfal.idm.oclc.org/asset/AWSS35953_35953_35708905.

Figure 3.9 - Margaret Neilson Armstrong (American, New York 1867-1944 New York). 4541. Bush Poppy, Dendromecon rigida. Drawings. Place: The Metropolitan Museum of Art, http://www.metmuseum.org. http://library.artstor.org.vcfal.idm.oclc.org/asset/SS7731421_7731421_11181367.

Figure 3.10 - Ray Eames (American, 1916 - 1988), Designer, Herman Miller, Inc. (American, founded 1923), Manufacturer. 1960 (designed); 1989 (manufactured). Stool. Furnishings. Place: Dallas Museum of Art, http://www.dma.org/. http://library.artstor.org.vcfal.idm.oclc.org/asset/ADALLASIG_10313603034.

Figure 3.11 - Pineles, Cipe. Spread from Leave Me Alone With the Recipes: The Life, Art and Cookbook of Cipe Pineles. Digital image. Fordham News. October 23, 2017. Accessed March 01, 2018. https://news.fordham.edu/arts-and-culture/long-lost-immigrants-illustrated-cookbook-exhibited-fordham-gallery/.

Figure 3.12 - Pineles, Cipe. Charm January 1954. Digital image. Graphic Design Archive Online. Accessed March 01, 2018. https://library.rit.edu/gda/designers/cipe-pineles.

Figure 3.13 - Pineles, Cipe. Seventeen July 1949. Digital image. Graphic Design Archive Online. Accessed March 01, 2018. https://library.rit.edu/gda/designers/cipe-pineles.

Figure 3.14 - Elaine Lustig Cohen, (graphic designer), Meridian Books, (publisher). 1957. Gothic architecture of scholasticism. covers (gathered matter components), paperbacks. http://library.artstor.org.vcfal.idm.oclc.org/asset/ACOOPER_10310347271.

Figure 3.15 - Elaine Lustig Cohen, (graphic designer), Meridian Books, (publisher). The dissociation of personality: a biographical study on abnormal psychology. covers (gathered matter components), paperbacks. http://library.artstor.org.vcfal.idm.oclc.org/asset/ACOOPER_10310347259.

Figure 3.16 - Levrant De Bretteville, Shelia. Spread from Everywoman. Digital image. Sheila Studio. Accessed March 01, 2018. http://sheilastudio.us/.

Figure 3.17 - Greiman, April. 1990. Ove Arup poster. http://library.artstor.org.vcfal.idm.oclc.org/asset/ARTSTOR_103_41822001182177.

Figure 3.18 - Scher, Paula; Chwast, Seymour, Curator: Hiesinger, Kathryn B., 1943-. December 2, 2012 - April 14, 2013, 01/28/2013. Double Portrait: Paula Scher and Seymour Chwast, Graphic Designers, Exhibition Installation View. http://library.artstor.org.vcfal.idm.oclc.org/asset/SS34888_34888_30553300.

Figure 3.19 - Figure 3.20 - Fili, Louise. Various Book Covers. Digital image. Louise Fili Ltd. Accessed March 01, 2018. http://www.louisefili.com.

Figure 3.20 - Fili, Louise. Wine labels for Polaner Selections. Digital image. Louise Fili Ltd. Accessed March 01, 2018. http://www.louisefili.com/polaner.

Figure 3.21 - Redacted graphic design history book, Lincoln, NE, Personal photograph by author. 2017.

Figure 3.22 - Detail graphic design history redacted book, Lincoln, NE, Personal photograph by author. 2017.

Figure 3.23 - Cardboard room installation, Lincoln, NE, Personal photograph by author. 2017.

Figure 3.24 - Detail cardboard room installation, Lincoln, NE, Personal photograph by author. 2017.

Fig. 3.25 - Mary Beth Edelson, Some Living American Women Artists/Last Supper, 1972, lithograph on paper, Smithsonian American Art Museum, Gift of Benjamin P. Nicolette, 2006.31.7

Figure 3.26 - Judy Chicago. 1974-79. The Dinner Party (overview). Place: Elizabeth A. Sackler Center for Feminist Art; Collection of the Brooklyn Museum of Art. http://library.artstor.org.vcfal.idm.oclc.org/asset/AJCHICAGOIG_10313027391.

Figure 4.1 - c.1915. Weimar Weaving Workshop Interior view. http://library.artstor.org.vcfal.idm.oclc.org/asset/ARTSTOR_103_41822001640620.

Figure 4.2 - Living at Bauhaus Dessau, Workshops, Otti Berger on the weaving loom, images from Kokusai-Kenchiku, Tokyo 1932. Photo Bauhaus-Archiv Berlin, © Yamawaki Iwao & Michiko Archives

Figure 4.3 - Nancy Newhall. 1948. Anni Albers, Black Mountain College, 1948. Place: Center for Creative Photography, University of Arizona, Gift of Ansel and Virginia Adams. http://library.artstor.org.vcfal.idm.oclc.org/asset/AWSS35953_35953_37982509.

Figure 4.4 - Albers, Anni. Green textile. Digital image. Dnaartspace. Accessed March 01, 2018. http://dnaartspace.tumblr.com/post/120098951886/bauhausbuzz-textiles-by-anni-albers-anni.

Figure 4.5 - Anni Albers, Tikal, 1958; Cotton, 30 x 23 in.; Museum of Arts and Design; Gift of the Johnson Wax Company, through the American Craft Council, 1979; Photo by Eva Heyd

Figure 4.6 - Albers, Anni. 1961. Haiku. Place: The Josef and Anni Albers Foundation. http://www.albersfoundation.org. http://library.artstor.org.vcfal.idm.oclc.org/asset/AALBERT_10311268124.

Figure 4.7 - Nighswander, Tim. Anni Albers, Study for Camino Real, 1967. Gouache on blueprint graph paper. Digital image. Vogue. February 4, 2017. Accessed March 01, 2018. https://www.vogue.com/article/anni-albers-textiles-americas-small-great-objects-yale.

Figure 4.8 - Gunta Stölzl, (Artist), Swiss, born Germany. 1897-1983. 1926--Bauhaus, Dessau, Germany. Drapery Material. Design Objects. Place: Museum of Modern Art (New York, N.Y.). http://library.artstor.org.vcfal.idm.oclc.org/asset/MOMA_10710005.

Figure 4.9 - Bauhaus. 1927-8. Linen & Cotton Wall Hanging prod. at Dessau by Gunta Stolzl. http://library.artstor.org.vcfal.idm.oclc.org/asset/ARTSTOR_103_41822001384591

Figure 4.10 - Photograph of Gunta Stolzl weaver. http://library.artstor.org.vcfal.idm.oclc.org/asset/ARTSTOR_103_41822001640752.

Figure 4.11 - Berger, Otti. Wandteppich, textile. Digital image. Blue Screen of Bauhaus. Accessed March 01, 2018. http://www.bluescreenofbauhaus.de/#ottiberger.

Figure 4.12 - Otti Berger (German, 1898-1944) Bauhaus (German). mid 1930s. Book. Textiles-Sample Books. Place: The Metropolitan Museum of Art, http://www.metmuseum.org. http://library.artstor.org.vcfal.idm.oclc.org/asset/SS7731421_7731421_11570361.

Figure 4.13 - Weaving Experiment, single color warp, multi-color weft, Lincoln, NE, Personal photograph by author. 2017.

Figure 4.14 - Warping floor loom in process, Lincoln, NE, Personal photograph by author. 2017.

Figure 4.15 - Weaving Experiment, multi-color warp, single color weft, Lincoln, NE, Personal photograph by author. 2017.

Figure 5.1 - By Strebe - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=16115242.

Figure 5.2 - By Strebe - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=16115307.

Figure 5.3 - Cameron, Darla. Special election for U.S. Senate in Alabama in 2017. Digital image. The Washington Post. December 12, 2017. Accessed March 01, 2018. https://www.washingtonpost.com/graphics/2017/politics/alabama-exit-polls/?utm_term=.73615c80c4a1.

Figures 5.4 - Google's Current Employee Demographics. Digital image. Statista. August 10, 2017. Accessed March 01, 2018. https://www.statista.com/chart/10640/googles-current-employee-demographics/.

2016 Presidential election results by gender. Digital image. USA Today College. November 09, 2016. Accessed March 01, 2018. http://college.

usatoday.com/2016/11/09/how-we-voted-by-age-education-race-and-sexual-orientation/.

2016 Presidential election results by race. Digital image. USA Today College. November 09, 2016. Accessed March 01, 2018. http://college.usatoday.com/2016/11/09/how-we-voted-by-age-education-race-and-sexual-orientation/.

New, Joshua. Visualizing Critical Issues in the United States with Open Data. Digital image. Center for Data Innovation. April 06, 2016. Accessed March 01, 2018. https://www.datainnovation.org/2016/04/visualizing-critical-issues-in-the-united-states-with-open-data/.

Figure 5.15 - By Ali Zifan, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=56526167

By Ali Zifan & Inqvisitor - This file was derived from: USA Counties.svg, Public Domain, https://commons.wikimedia.org/w/index.php?curid=47804584

Figure 5.15 - 2016 Electoral results. Digital image. Five Thirty Eight. November 09, 2016. Accessed March 01, 2018. http://fivethirtyeight.com/live-blog/2016-election-results-coverage/.

By ChrisnHouston - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=52981988

Figure 5.15 - Ideas for electoral maps, Lincoln, NE, Personal by author, 2016.

Figure 6.1 - Levrant De Bretteville, Shelia. Everywoman cover. Digital image. Sheila Studio. Accessed March 01, 2018. http://sheilastudio.us/.

Figure 6.2 - Levrant De Bretteville, Shelia. Spread from Everywoman. Digital image. Sheila Studio. Accessed March 01, 2018. http://sheilastudio.us/.