

Recommendations to rebuild the body of feminist work in industrial design

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Abstract: Feminist work exists in industrial design and contributes to society, the feminist movement and the industrial design field itself. Though much of the work dates from the 1980s and 1990s, which leaves the contemporary industrial design field without much feminist critique and intervention, and without the many contributions of this body of work. Thus, there is a need to rebuild the body of feminist work in industrial design. However, the feminist movement in industrial design is difficult to grasp and it's hard to know how to move forward and contribute to this rebuilding. This paper provides recommendations to inform this complex task based on readings on the topic of feminism and a literature review on feminism in design. The recommendations touch-on how to address the limited presence of feminism in industrial design, the contemporary relevance of older feminist work in industrial design and how contemporary feminism could inform newer work.

Keywords: feminism; industrial design

1. Introduction

This paper introduces the feminist movement in industrial design, its contributions and its major challenge - the shortage of feminist work in industrial design. It argues that there is a need to rebuild the body of feminist work in industrial design, but that this is a difficult task given that feminism in industrial design is a complex topic. This paper addresses this problem by providing perspectives on how to inform the rebuilding of the body of feminist work in industrial design.

This paper helps respond to the DRS 2016 question: How can design research help frame and address the societal problems that face us? Feminism in industrial design contributes to society by identifying feminist concerns in the industrial design field and proposing and adopting solutions to address them. It contributes to the feminist movement by adding to



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its reach and grasp of the depth and complexity of feminist concerns. Finally, it offers ethical contributions to the industrial design field by highlighting issues and helping to advance industrial design theory and practices for increased equality.

2. Context

2.1 Feminism

There have been significant gains in the rights and status of women in the last century. However, inequality, injustice and oppression of women remain present in contemporary societies. This includes issues like gender-based violence, gendered employment and difference in pay, and social discrimination (Walby, 2011).

Feminism is an emancipatory political activity assumed by women or men for women (Jardine & Smith, 2013; McCann & Kim, 2010). It is based on the view that women live in unjust conditions, which can and should be changed (McCann & Kim, 2010). Feminism has a dual goal of identifying and exploring these issues and establishing and carrying out plans for change with the goal to improve the lives of women (McCann & Kim, 2010) and to achieve equality between women and men (Rich, 2014). Feminism has been integral to the advancement of the rights and status of women and remains a critical component in the fight to address the remaining concerns.

Problems of inequality, injustice and oppression permeate all levels and parts of society including politics, the economy, the media, the medical field and sports (Walby, 2011). There are feminist projects in each of these areas to identify and address them (Walby, 2011). It follows that these issues also seep into the industrial design field and there is a discipline-specific feminist movement to identify and address them.

2.2 Feminism in industrial design

Feminist work in industrial design exists in research and in practice. Industrial design theorists, often historians, typically present the feminist concerns. Resolutions are mostly found in industrial design practitioners' writing, especially when they discuss their own feminist design practice.

3. Problem

The bulk of the feminist work in industrial design dates from the 1980s and 1990s. Though, at that period, it was acknowledged that there was little work on the subject, both in theory and in practice (Rothschild, 1999). The presence of the feminist movement in industrial design has deteriorated even since then. There have been few examples of feminist work in industrial design since the year 2000. This shortage limits this body of work by preventing depth and breadth of discussions.

This problem is compounded by the fact that feminism is context dependent: its priorities and perspectives change across time and place (McCann & Kim, 2010). As such, the

concerns and resolutions presented in the existing work might not be relevant today. This leaves the contemporary industrial design field without much feminist critique and intervention, which is detrimental to society, the feminist movement and the industrial design field itself. Thus, there is a need to rebuild this body of feminist work in industrial design. My doctoral research and the work of several other recent design researchers and doctoral students in design contribute to this end.

Yet, in the earlier period, the feminist movement in industrial design was relatively unified and organized. There were anthology publications (for instance, Attfield & Kirkham, 1989 and Rothschild, 1999) and conferences on the subject like the “Re-visioning Design and Technology: Feminist Perspectives” conference in New York in 1995 (Rothschild, 1999). This would have helped contributors to understand where the movement’s been and to discuss where it’s going. Today, researchers and practitioners in the field work separately and in parallel. These discussions don’t seem to take place. Further to this, the feminist movement in industrial design is difficult to grasp. There are many intersecting and complex topics (feminism, industrial design and feminist work in industrial design) and factors (changes over time and the limited presence of feminist work in industrial design) at play. At present, each contributor to the movement would need to grapple with the topic on their own. Combined, this situation makes it difficult to know how to move forward and contribute to this rebuilding, and is likely detrimental to the feminist movement in industrial design itself as it could lead to an overlap of work, prevent collaborations and limit outreach to individuals outside the movement.

4. Research focus

The goal of this text is to inform the rebuilding of the body of feminist work in industrial design. To this end, it dissects the complex topics and factors related to the feminist movement in industrial design.

The text starts with a rough history of feminist ideological strands and notes on the changing visibility of feminism. This provides a framework for the discussions that follow.

The next three sections are the heart of the paper.

- The first proposes why feminism in industrial design has had and continues to have a limited presence and how this can be addressed moving forward.
- The second introduces the older feminist work in industrial design and discusses its contemporary relevance.
- Finally, the last section proposes new directions for feminist work in industrial design based on contemporary feminism.

This paper is the culmination of three years of extensive research on the intersections of feminism and industrial design. It is based on many readings on the topic of feminism and a broad literature review on the feminist question in design. Here, the discussion of feminism

in industrial design is centred on literature that explicitly mentions feminism and industrial design to enable a precise and discipline-specific understanding of the topic.

5. Feminism

5.1 Feminist Ideological Strands

Within feminism, there are “numerous [feminist] ideological strands that differ in the scope and the change sought, the extent to which gender inequality is linked to other systems of domination- especially class, race, ethnicity, and sexuality- and the significance attributed to gender differences (Dahl Crossley et al., 2012, p. 500). These provide “guidance as to the actual positions one should take within specific cases” (Blattberg, 2001, p. 194). The following is a rough history of Western feminism to showcase key arguments and trends, and changes over time.

Feminism first emerged in the mid or late 19th century and lasted until the early 20th century (Lanius & Hassel, 2015). It was largely focused on achieving “rights for women as citizens” like the right to vote and to education (Lanius & Hassel, 2015, p. 12).

Feminism re-emerged in the 1960s with the understanding that “equality in daily life cannot be obtained through simple legal, political or institutional modifications” (Eichler & Lavigne, 2015). There were two major branches of feminism during this period: liberal feminism, a reform movement, and radical feminism (Ryan, 1992).

Liberal feminism was inspired by Betty Friedan’s critique of women’s role in the home in *The Feminine Mystique* (Ryan, 1992). As Deborah Wills explained, “Friedan’s solution for women’s emotional enslavement to being mother and wife is to promote the view that women become educated and work outside the home” (2000, p. 214). Thus, the liberal feminist ideology argued that women can improve their position by working outside the home and entering politics (Taylor, Whittier & Pelak, 2004). Its followers also critiqued sexism, which they associated with gendered socialization like how parents interact with female or male children (Krolokke & Scott Sorensen, 2006).

While liberal feminism focused on progress in the lives of individual women, radical feminism focused on women as a group and large-scale change (Taylor, Whittier & Pelak, 2004). Radical feminism was inspired by *The Second Sex* by Simone de Beauvoir (Taylor, Whittier & Pelak, 2004), especially the arguments that women are oppressed as ‘other’ and “the only authentic moral action is women’s collective struggle for their own liberation” (Davis, 2000, p. 39).

The radical feminist ideology holds that patriarchy is a universal system (Hines, 2015) that emphasizes power, competition and hierarchy (Tong 2014) and results in the “systematic male dominance of women” (Hines, 2015, p. 24). Patriarchy is based in institutions like the family that exploit women through domestic work and keep them from entering the public

world (Hines, 2015). Patriarchy is so entrenched that it “cannot be reformed but only ripped out root and branch” (Tong 2014, pp. 2-3).

There are several divisions within radical feminism. For instance, cultural feminism holds that women’s subordination can be resolved by assigning a higher value to feminine gender or by inventing a new understanding of femininity or ‘femaleness’ (Tong, 2014). Some even believe that “women’s essential nature was better than men’s and that women ought to govern men” (Tong, 2014, p. 53). Ecofeminism is an offshoot of cultural feminism (Henwood, 2007). It associates ecological destruction with male power, where men “subordinate both women and nature, seeing themselves as ‘masters of both’” (Henwood, 2007, p. 277). In contrast, it argued that women are naturally closer to nature because of processes like childbirth and values toward cooperation and nurturing (Henwood, 2007).

Feminism transformed in the 1980s and 1990s as new ideologies developed and became dominant (Krolokke & Scott Sorensen, 2006). These represent greater diversity and explore how “women’s lives are shaped by race, nationality, class, and sexuality, as well as by gender” (McCann & Kim, 2010, p. 22). The term intersectionality refers to the overlap between these different systems (McCann & Kim, 2010). The following are examples of these new streams of feminism.

Postcolonial feminism is “an exploration of and at the intersections of colonialism and neocolonialism with gender, nation, class, race, and sexualities” (Sunder Rajan & Park, 2008, p. 55). It is strongly inspired by “Can the Subaltern Speak?” by Gayatri Chakravorty Spivak (1988), which argued that Western thought is entrenched in the colonial legacy and doesn’t see the ‘subject position’ of other populations (Tong, 2014).

Postmodern feminism draws on postmodern and poststructuralist theories (Mehta, 2000), which show that gender, class, race and ethnicity “can no longer be regarded as an essential or even a stable category” and, thus, puts into question the ‘category of women’ (Waugh, 1998, p. 185). These theories can be applied in a variety of ways and to varying extremes (Flynn, 2002). Patricia Waugh points to Donna Haraway’s “Manifesto for Cyborgs” as an example of this strong application of postmodern feminism (1998). In this work, the cyborg is “a creature in a postgender world” (1987, p. 3; Waugh, 1998) and is a metaphor through which Haraway critiques limited visions of concepts like woman, man, race or identity (1987).

This diversity of feminist streams heralded a ‘third wave’ of feminism in the 1990s, which continues to this day (Hines, 2015). The third wave was led by a new generation of women (Orr, 1997) that respected the diversity of different feminist theories and had open views on “who could be a feminist and how” (Marecek, 2000, p. 474). The third-wave is “consequently not one, but many” (Krolokke & Scott Sorensen, 2006, p. 17). It also places a strong emphasis on contemporary issues like technology and mass media (Snyder, 2008).

5.2 Changing Visibility of Feminism

In *The Future of Feminism* (2011), author Sylvia Walby explained that feminism has become less visible over time (Walby, 2011). It transitioned from a public protest movement to a more institutionalized movement with its own agencies in governments and organizations (Walby, 2011). These agencies' activities are less frequently publicized in the media compared to those of a protest movement (Walby, 2011). Further, feminism is increasingly combined with other projects like the environment and human rights, and may not be identified in these situations (Walby, 2011). Finally, feminism is stigmatized: "[it] has acquired connotations of separatism, extremism, [and] men-avoiding lesbianism" (Walby, 2011, p.2). As such, individuals may avoid using the term feminism, in favour of a related term like equality (Walby, 2011).

6. Limited Presence of Feminism in Industrial Design

Several authors in the 1980 and 1990 period hypothesized about why the feminist movement in industrial design had a limited presence. Cheryl Buckley hinted that the shortage of feminist work in industrial design research was because feminism is a challenging and controversial subject (1999). She said: "Questions about women's role in design remain tangential to the discipline and are tackled with reluctance" (Buckley, 1999, p.109). In turn, the shortage of feminist work in industrial design practice could have been because "[industrial] designers who are women-and who identify as feminist-still remain relatively few ... [and] they have yet to write extensively about their work" (Rothschild & Rosner, 1999, p.23).

These limitations probably still hold true today. Feminism remains a challenging and controversial subject and there are likely still few feminist designers. Several polls published online show that only a small percentage of Americans consider themselves feminist: the number ranges from 18% (Perry Udem, 2015) to 28% (YouGov, 2013). Further, according to the survey by YouGov, more women consider themselves feminist than men: 38% compared to 18% (2013). This difference is significant to industrial design. In Canada, only about ¼ of industrial designers are female. In 2006, women represented 27% of Canadian industrial designers (Service Canada, 2013) and, according to a 2011 report, 24% of members of an industrial design association in the province of Quebec (ADIQ; Tison, 2011). Thus, a renewed body of feminist work in industrial design would not necessarily surpass the level from the 1980s and 1990s, but might be able to match it.

The changing visibility of feminism likely also plays a part in the limited presence of feminism in industrial design today. It is unlikely that feminist work in industrial design is merely hidden, as this research involved an extensive literature review. Instead, feminist work in industrial design is probably not identified as such. One example is the work of Sputniko!, a design researcher and practitioner based at MIT. Many of her critical design projects align with feminist goals, but none are directly associated with feminism, either in her writing or in reviews of her work. As an example, *Nanohana Heels* (2012) is a critical design product by

Sputniko! in response to Japan's Fukushima nuclear disaster in 2011 (Sputniko!, 2015). It is a pair of high-heeled shoes that automatically plant Rapeseed plants, which are known to help absorb radioactivity. The project is a commentary on the relationships between female empowerment, femininity, sexuality and the national psyche (Sputniko!, 2015).

The situation that feminist work in industrial design is not identified as feminist has advantages and disadvantages. On one hand, it's positive that researchers and practitioners continue to support the position of women through their work. Further, avoiding the term feminism might encourage greater support and collaboration on these projects. The survey by Perry Udem, cited earlier, shows that 78% of respondents "believe in social, political, legal, and economic equality" for women and men, including those that do not consider themselves to be feminist (2015, p. 15). Yet, it's problematic that avoidance of the term feminism could be motivated by a negative stigma. As such, efforts moving forward should support any industrial design project aligned with feminist goals, but, at the same time, strive to improve understanding of feminism and its image.

7. Older feminist work in industrial design

7.1 Feminist Concerns in Industrial Design

- The industrial design field is a male domain: In their 1999 article, Clegg and Mayfield explain that product design is a 'male thing.' This is attributed to the "gendering of technical competency" where women are made to feel that they can't do certain technical things like hammering (1999, p. 9). These "gendered perceptions shape the choices of men and women in design education" (Clegg & Mayfield, 1999, p. 15). Thus, there are less women in technical fields like product or furniture design than in (apparently) less technical design fields like fashion design (Clegg & Mayfield, 1999). This could be seen as a liberal feminist critique given Clegg and Mayfield's emphasis on equality in the workplace.
- The industrial design field is rooted in masculine values: Amelia Amon explains that industrial design is rooted in masculine values, which is demonstrated, for instance, through the alignment of designers with corporations and an emphasis on cost savings (Amon, 1999). This dominance of masculine values neglects feminine values like those that emphasize compassion and prioritize the environment or users (Amon, 1999). Amon appears to draw on cultural feminism and possibly ecofeminism in her discussion.
- Women had limited and gendered roles in industrial design: In historical discussions, Buckley (1989) and Kirkham (1989) explain that, in the rare cases that women did participate in design, they often had gendered roles. Their roles were assigned based on perceived female traits of being physically weak (Kirkham, 1989) and suited to delicate tasks (Buckley 1989). Women decorated pottery in the pottery industry (Buckley, 1989) and upholstered

furniture in the furniture industry (Kirkham, 1989). Based on their focus on equality in the workplace, these articles are likely aligned with liberal feminism.

- Female industrial designers are not diverse: Buckley (1989) and Gorman (2001) briefly note that class and race also mediate women's participation in design. These authors draw implicitly on intersectionality in their texts.
- Women's roles in industrial design are devalued and ignored: Cheryl Buckley explores these points in "Made in Patriarchy: Toward a Feminist Analysis of Women and Design" (1986). As she explains, "[in] a patriarchy, men's activities are valued more highly than women's" (1986), so the role of furniture upholsterer would have had a lower status than furniture maker. Second, she explains that women's interventions are ignored through methods including the definition of design (1986). Historically, "craft allowed women an opportunity to express their creative and artistic skills outside of the male dominated design profession" (Buckley, 1986, p. 7). Thus, "[to] exclude craft from design history is, in effect, to exclude from design history much of what women designed" (Buckley, 1986, p. 7). Buckley proposes to expand the definition of design to include craft (1986). Yet, Carma Gorman disagrees with this last point, as "[s]uch a redefinition can do absolutely nothing to change the fact of past inequities" (2001, p. 79). Indeed, understanding these inequalities is important to move forward (Gorman, 2001). Cheryl Buckley's arguments appear to be based on radical libertarian feminism given her focus on patriarchy and challenge to divisions between female and male activities.
- Designer-consumer relationships are patriarchal: The primarily male industrial design workforce controls female consumers through the products they create (Partington, 1989). For instance, designers make products with a specific vision of how they should be used (Partington, 1989) and these products frame consumer's lives (Lupton, 1993). Yet, in "The Designer Housewife in the 1950s," Angela Partington notes that female consumers do have some agency in this process, as products are "invested with other meanings and values by female consumers" where they can apply their own knowledge and creativity (1989, p. 211). These critiques seem to draw on radical feminism given their focus on patriarchy and the distinction between the public and domestic worlds.
- Designer-consumer relationships reinforce patriarchy: Patriarchy "defines the designer's perceptions about women's needs as consumers" (Buckley, 1986, p.8) and designers exploit and perpetuate women's gendered roles by drawing on these perceptions (Schwartz Cowan, 1983). This can be especially the case when designers try to help female consumers through 'labour saving' household equipment. Angela Partington explains "it is well known that the introduction of 'labour saving' equipment has coincided with an increase in the

average amount of time women spend on housework” (1989, p. 212). This could be explained through Philippa Goodall’s 1983 discussion of the microwave: while the microwave is meant to improve convenience, for the housewife “it is a duty, a duty to provide food at all times, even when the shops are shut or the market closed and most of the family has already eaten” (Goodall cited in Buckley, 1986, p.8). Once again, these works seem to draw on radical feminism because of their focus on patriarchy and the public and domestic worlds.

- Male designers might not understand female users: From a likely cultural feminist perspective, Nancy Perkins argues that female designers are best able to understand female users, and “when women are absent ... criteria for what is comfortable, appropriate, and appealing to women may be overlooked” (Perkins, 1999, p. 120).
- International exportation of products has been harmful to and controlling of other populations: In “Representations of Women and Race in the Lancashire Cotton Trade,” Mumby is critical of the export of cotton from Britain to India and China in the 19th century (1989). She explained that this process destroyed local cotton industries in India (1989). Further, prints on the cotton and its advertising had caricatures of Indian women that showed them as “poor, passive or sexual objects” (Mumby, 1989, p. 27). Mumby saw these representations as a form of oppression and cultural control (1989). Mumby’s arguments seem to draw on postcolonial feminism by critiquing power relations between Britain and India and China, and by focusing on how the textile makers ignored the subject position of Indian women.
- Different points of view on gendered products: There are conflicting views in literature about the value of gendered products. In “Objectifying Gender: The Stiletto Heel” (1989), Lee Wright provided a counter argument against the typical feminist critique of the stiletto heel, a highly ‘feminine’ product and one that restricts women’s mobility (1989). Wright argued that the stiletto shoe is empowering to women because of its femininity and because it represents ‘a new woman’ that has a life outside the home (1989). Her discussion likely draws on cultural feminism given her focus on the female/feminine alignment.

7.1 Feminist Resolutions in Industrial Design

The resolutions presented here were identified in a series of three essays written by industrial design practitioners for Joan Rothchild’s book, *Design and Feminism: Re-visioning spaces, places and everyday things* (1999). In one essay, Angela Partington suggests that feminist design practice “should be exploring the ways in which femininity is celebrated through women’s use of commodities” (1989, p. 212). Another writer, Amelia Amon proposes that it should emphasize users’ needs and wants and employ “appropriate technologies [and] alternative energy sources which use natural systems” (1999, p. 126).

Amon applies this vision in her practice (1999). An example is a solar-powered ice-cream cart she designed for Ben and Jerry's (1999). Finally, Wendy E. Brawer sees feminist design practice as "ecologically and socially responsive" (1999, p. 129). She also applies feminism in her practice (1999). An example is the Deposit Bank, which is a public bottle and can recycling box accessible to 'bottle pickers' (1999). This product was installed in New York City and provided bottle pickers healthier and more dignified access to recyclables (1999). These discussions are based on cultural and sometimes ecofeminist perspectives.

7.2 Contemporary Relevance of this Older Work

The older literature draws on many different strands of feminism and its feminist alignments change over time, reflecting changes to feminism more broadly. Yet, the literature is quite old; the bulk of it dates from the 1980s and 1990s. Further, in many cases, the feminist streams in design literature align with feminism from about a decade earlier. Thus, feminist perspectives and priorities from about the 1980s onward are minimally represented.

That being said, contemporary feminism is open to different perspectives and priorities. While older feminist streams are less popular today, they still represent legitimate perspectives. Nevertheless, this work could be limited by its relevance to the current context. Goodall's critique that the microwave creates more work for housewives is a case in point (1983/1996). A discussion of working women's experiences might be more relevant now. Thus, this literature could be applied in the renewed body of feminist work in industrial design if its content were screened for contemporary relevance.

8. Intersections of Contemporary Feminism and Industrial Design

New feminist work in industrial design could apply more contemporary feminist streams like postcolonial and postmodern feminism, which were minimally represented in the older work. Mumby's application of postcolonial feminism hints at the potentially valuable contributions of this more contemporary feminist stream to reimagine elements like production, trade and markets (1989). Further to this, contemporary feminism would support the co-existence of a diversity of perspectives.

As mentioned earlier, today, feminism places a strong emphasis on contemporary issues like technology and mass media (Snyder, 2008). Industrial design research and practice is closely aligned with these two topics. Thus, the feminist work in industrial design could contribute to these existing discussions. Finally, it was mentioned that feminism is increasingly institutionalized in agencies and combined with projects on related issues like the environment or human rights. This new work in industrial design could follow these models. It could aim to inject a feminist perspective in industrial design institutions like professional associations, education institutions, or research societies. Further, potential alignments between feminism in industrial design and other movements like design activism, critical design or even sustainable design could be explored.

9. Conclusion

This paper presented the value of the feminist work in industrial design as well as the challenges facing this body of work: its limited quantity and its contemporary relevance. The major goal was to develop some recommendations to inform the rebuilding of this specialization. I explained that it is probably not reasonable to expect the quantity of feminist work in industrial design to surpass the level from the 1980s and 1990s, but it might be able to match it. Efforts moving forward should support any industrial design project aligned with feminist goals. This could include translating the older work to the contemporary context or applying the multitude of contemporary feminist streams to industrial design research and practice. This could equally involve less intuitive projects like contributing to feminist discussions on technology and mass media from an industrial design perspective, injecting a feminist perspective in industrial design institutions, and exploring the alignment between feminism in industrial design and related design movements, provided that improving understanding of feminism and its image remain a focus.

Much of the new feminist work in industrial design is already moving in these directions. The following are some individuals that I've encountered in person or through readings working in this area. Sandra Buchmüller is a researcher associated with the Berlin University of the Arts in Germany (Design Research Lab, n.d.). She is working on a model of feminist design research and practice that merges feminist standpoint theory and the gender theories, performing gender and undoing gender, with human-centred design (Buchmüller, 2012). Karin Ehrnberger is a doctoral student at the Royal Institute of Technology in Sweden (KTH, 2015). She has published several feminist critiques of industrial design norms. As an example, she co-authored an article with professors Minna Räsänen and Sara Ilstedt, on gendered industrial design products and the harmful implications of a gendered approach (2012). Finally, Sarah Fox is a PhD student at the University of Washington in the United States (Dub, n.d.). She has co-authored papers on the phenomenon of feminist hackerspaces, "workspaces that support the creative and professional pursuits of women" (Fox, Ulgado & Rosner, 2015, p.1) and the intersections of feminism and critical design (Ulgado & Fox, 2014). Their work touches on many of the topics discussed above and often blends several areas of emphasis like applying contemporary feminist theories in design and exploring the alliances between feminism and other design approaches like universal design or critical design. Nevertheless, their work also leaves many subjects open for exploration.

Hopefully this paper will be a step toward reinvigorating the valuable feminist movement in industrial design by informing and inspiring new contributions.

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