Master's Thesis

FEMINIST STAGING MOVES: A PARTICIPATORY DESIGN APPROACH

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TITLE PAGE

EDUCATION	MSc Sustainable Design Engineer
UNIVERSITY	Aalborg University, Copenhagen
SEMESTER	4th Semester, Master Thesis
PERIOD	Febuary 2022 - June 2022
THESIS TITLE	Feminist Staging Moves: A Participatory Approach
PAGES	33
CHARACTERS	57343 (with space)
SUPERVISOR	Signe Pedersen Associate Professor, Department of Planning

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TABLE OF CONTENT

This design team has chosen to deliver the Master Thesis in the format of an article. This preface serves to introduce the scientific article *Feministic Staging Moves: A Feministic Participatory Design Approach* and its relevance within the field of Sustainable Design Engineering. We thus wish to introduce our background as Sustainable Design Engineers and how feminism relates to sustainability.

Introducing a Scientific Article

This Master's thesis is submitted as a scientific article aimed to be published in the journal by Elsevier, Design Studies. Therefore the submission will fulfil the requirement for the journal. The journal is concerned with design processes across all domains. It provides an interdisciplinary forum to discuss design activities and thus has a broad audience. The articles should "offer new insight into or knowledge about the design process" (Elsevier, n.d.).

	requirements in Design Studies	in our article 'Feminist Staging Moves'
words	5000-8000	7387 words
language	prefer British English	British English
abstract	max 120 words	117 words
references	prefer APA-style	APA-style

As this thesis provides the reader with a methodological contribution to an already existing participatory design framework presented in Design Studies, we see that this journal holds the greatest opportunities to reach the target group. As we aim to target participatory designers and researchers as they are familiar with the format of an article. We aim for this study to create awareness of feministic perspectives in the field of participatory design and to initiate a start or expand the discussion of the importance of bringing a feministic perspective into the field of engineering and innovation. As this thesis does not build on a collaborative project with a partner or organization, the knowledge of this master thesis cannot be mobilized through the collaborator's ownership of the project. Thus, to mobilize the findings and contributions from this study, an article is seen as the appropriate format to do so.

Our Position

The researchers of this study are three white women in their mid-20s from Northern Europe. Our professional background is within the sustainable engineering and innovation field. This research is a part of our Master's thesis in MSc Sustainable Design, an engineering program at Aalborg University, Copenhagen, Denmark.

Besides our previous and minimal project work with social issues, we have an intrinsic motivation to learn more about feminism and its relation to design. This got sparked by *Invisible Women: Exposing Data Bias in a World designed for Men*, a book written by Carolina Criado-Perez (2020). From this book, we got our fundamental understanding of *men as default*, which activated our drive to explore the relationship between design within the engineering and innovation field and feminism in our professional work.

Our definition of feminism throughout this article is intersectional, meaning political, social, and economic equality of all individuals. As feminism has multiple perceptions, interpretations, and associations and has evolved throughout history, it is important for us to state, that our interpretation of feminism is about all sorts of oppressions, not only based on gender but also age, sexuality, ethnicity, etc. However, this research has its outset in the oppression of gender, i.e. the inequality between both gender and sex, which the study reflects.

With a definition regarding all humans, we aim to create one that includes and acknowledges different experiences of oppression. We believe in the importance of "pulling together" rather than pointing fingers at having different feministic standpoints. Feminism to us is a constantly evolving process where you need to learn and expand your worldview and you need to start somewhere.

Sustainable Design & Feminism

As Sustainable Design Engineers, we are concerned with working towards a sustainable transition. Sustainability can happen on different aspects, where the design team of this study see feminism strong relation to social sustainability. As mentioned before, this article engages in feminism in design, which has a strong relation to social sustainability.

Sustainability was officially first defined in the Brundtland report (1987) as a development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland et al., 1987, p. 16), highlighting that we need to consider the long-term impact of our impacts regarding *environmental, social,* and *economic* aspects. Feminism thus has a link to social sustainability as it is fighting inequality. As Feminism is rooted in gender inequality, the link to social sustainability is directly represented in Sustainable Development Goal 5 (The United Nations, n.d.): *Achieve Gender Equality and Empower all Women and Girls,* further unfolding in SDG 5.5 is the concern of having full and effective participation and equal opportunities for women.

However, feminism is about the oppression of all sorts, whereas intersectional feminism (Crenshaw, 1989) aims to fight against various forms of discrimination, inequality and oppression that affect women from marginalized and underrepresented groups. In the Six Transformation to Achieve Sustainability Goals the principle of "leave-no-one-behind" is stated (Sachs et al., 2019). The principle of "leave-no-behind" illustrates one of the two principles, that Sachs et al. (2019) argue for the foundation to accommodate the SDGs. More in dept, this principle is about "equity and fairness aims to overcome inequalities and discrimination by gender, race, social status or other qualifiers, which result from a range of factors including power dynamics, discrimination, poor system design and insufficient financing" (Sachs et al., 2019). The pursuit of feminism regarding gender equality and the dismantling of current social structures is essential for fostering social sustainability and creating a more equitable society for all individuals.

Even though feminism has a natural link to social sustainability, it can also be argued that feminism is linked to the issues regarding environmental and economic sustainability. As we have lived in a world where masculinity is favoured over feminity, Gaard (2015) argues that climate change will not be solved by the current masculine structure of society. It is further argued that this is because it is the masculinist ideology, that has produced the over-consumption, leading to the cause's climate changes. Furthermore, it is stated by Bloodhart & Swim (2020) that "consumption is associated with power, status, and wealth" (p. 4), which all are stereotypical masculine traits. They further argue that a reduction in consumption is considered feminine (Bloodhart & Swim, 2020). Another example regarding environmental sustainability is from Brough et al. (2016), emphasizing how the ongoing dismissal of femininity in society affects sustainable behaviour. Specifically, it is shown that men are less like-ly to buy products that are better for the environment be-cause it is 'unmanly'.

As Sustainable Design Engineers, we, therefore, see the need to incorporate feminism in design. The inequality that exists within the world of today, is represented in the products, services, and systems we surround us with. Adapting to a feministic approach in design, aiming to ensure the needs, perspectives, and experiences of oppressed groups, including women, and thereby promoting the creation of products, services, and systems made for such groups, including women. Incorporating feminism in the design approach can be a step in the direction to start valuing femininity higher, which eventually can benefit the environment.

References for Preface

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Feminist Staging Moves: A Feministic Participatory Approach

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Participatory design (PD) and feminism share the drive for equality and inclusion; nevertheless, PD has lost some of its initial ideals. This article investigates how PD and feminism could benefit each other, to secure these ideals, through literature and conducted qualitative interviews. This research illustrates that PD can benefit from the reflective nature of feminism, while feministic approaches can benefit from the actionable PD method: Staging Negotiation Spaces Framework (SNS). Introducing Feminist Staging Moves as an expansion of the SNS framework, this research explicitly addresses feministic perspectives behind the scenes of participant involvement. This research contributes to the ongoing discussion about the role of the designer, offering insight into fostering a more inclusive and equitable design process.

Key-words: Participatory Design, Feminism, Staging Negotiation Spaces, Staging, Feministic Design Approaches.

A fundamental part of human society is having *men as default* (Criado-Perez, 2020), meaning what is masculine becomes universal. This issue also exists within the field of engineering and innovation, in which the design theorist Anne-Marie Willis (2006) states that "We design our world, while our world acts back on us and design us" (p. 70). This is further elaborated by Buchmüller (2012) and Baker (2018), who state femininity in design is either presented stereo-typically or completely ignored. For example, Helen Hester documents how femininity is programmed into automated systems such as Siri and Alexa. She reckons these "exploit assumptions about feminised labour" (Hester, 2016), reproducing normative gender roles. The reproduction of stereotypes is not only seen in the final design but also in design methods such as personas, which have been critically discussed within the last years of related literature (Turner & Turner, 2011). The consequences of ignoring women as users are reflected in our everyday life: voice recognition is programmed to be more sensitive to the way male talks (Criado-Perez, 2020, p. 162); medical research is mainly tested on men (Phillips, Gee, & Wells, 2022), resulting in symptoms of the female sex being 'atypical' due to the metabolic difference between the sexes, forcing the female sex to take medical drugs that act differently on their body (Craido-Perez, 2020); safety tests are done with dummies using male measurements, resulting in women being 47% more likely to get injured in a car accident (Bose, Segui-Gomez, & Crandall, 2011). These are the terrifying results of living in a world where the standard used is *men as default*. Using men as default is not only affecting women but all sorts of marginalized groups.

Costanza-Chock (2018) argued that the "Intersection forms of oppression, including supremacy, cisnormativity, hetero-patriarchy, capitalism and settler colonialism, are hard-coded into designed objects and systems" (p. 10). This is not done intentionally by the individual designer, but it is rather a result of structural forces: the resources in a design project are typically based on potential profitability (Costanza-Chock, 2018); due to the unintentional bias represented by the designer or design team (Costanza-Chock, 2018); or due to the use of systematically biased dataset (Criado-Perez, 2020).

To address this issue, it is relevant to look at *how* we design. The way we practice design is dominated by the user-centred paradigm, including methodologies such as Design Thinking (Brown, 2008), Human-Centered Design (Sanders & Stappers, 2008), Participatory Design (Robertson & Simonsen, 2012), and more. This research focuses on Participatory Design (PD), which emerged in the early 1970s in Scandinavia as a response to traditional design methods that often excluded users and stakeholders. In contrast to other established user-centred design methods (Abras, Maloney-Krichmar, & Preece, 2004; Norman, 1986), PD extends the notion of participation and involvement to include a wide range of actors beyond users, where the participatory designers Grönvall, Malmborg, & Messeter (2016, p. 41) advocate for the need to engage multiple actors as they are the experts. PD has an idealistic strive for the social concept of democracy, which values and allows for appropriate and equal participation (Ehn, 2008; Luck, 2018). However, according to research made within the community of PD-practitioner, Bannon, Bødker, & Bardzell (2019) state that PD "has lost some of its clarity and/or identity" and, more importantly, has been "depoliticized, dropping its original commitments to democracy and dialogue in favour of more consumer-oriented methods" (Bannon et al., 2019, p. 28).

In response to the methodological issues within PD, Bardzell (2010) argues, PD could both inform and be informed by feminism. Feminism has evolved throughout history by critiquing power relations and the societal hierarchy, where it strives for political, social, cultural, and economic equality for all people. The starting point of feminism was the marginalized position of women but has evolved to an intersectional perspective (Crenshaw, 1989), emphasising all sorts of oppression such as ethnicity, class, sexuality, etc. PD and feminism have the same goal since they "both are committed to a view of democracy that foregrounds relations of power" (Bardzell, 2018, p. 3). Although PD in the early days included a critical view on power relations, Lykes & Hershberg (2012) argue that it has "failed to either include women as independent actors in their local projects or problematize gender oppression and heterosexism" (p. 333). This is a general issue within design methodologies: Baker (2023) describes how user-centred design methods can have good intentions to include various users and their needs, however, these methods are still culpable of reproducing gender stereotypes (p. 545); Buchmüller (2012) argues that feminism is not systematically integrated into human-centred design, as it does not explicitly guide the designer's attention from a feministic point of view.

Therefore, a need and relevance of investigating the intersection between feminism and PD exists. This study explores the following research question: How can the reflective nature of feminism and the action-ability of participatory design complement each other? This research contains a review of relevant literature and empirical insights gathered through qualitative interviews with experts practising feminism in design. This study contributes to the parriciptory design field by expanding the already existing *Staging Negotiation Spaces* (SNS) framework (Pedersen, 2020; Pedersen, Bogers, & Clausen, 2022) using feministic perspectives. The new contribution is addressed as *Feminist Staging Moves*. The expansion allows SNS and feminism to strengthen each other: the critical reflectivity of feminism strengthens the initial beliefs of PD, which SNS relies on, whereas SNS provides an actionable framework for the design-er to practice such.

Glossary used in this Research

Approaches	Refers to an overall term that encapsulates the spectrum between per-spectives, theories, methods, and tools both within the field of participatory design and feminism.
Designer	Refers to the facilitators of processes rather than just the creator of products or services. The designer is not limited to a certain field or domain, instead, it is seen as one creating the form, function, experience, and/or knowledge.
Design Team	Refers to the researchers and designers behind this study. This research is conducted by three white cis-women in their mid-20s, originating from the Netherlands and Denmark. The research is part of a Master's thesis in MSc Sustainable Design, an engineering program at Aalborg University in Copenhagen, Denmark.
Stereotypical	Refers to a general assumption, which often is a prejudice. The term 'stereo-typical' refers to the negative characteristic of a certain group, which is based on the issues of valuing male over female; white over black; abled over dis-abled; cisgender over transgender; hetero-sexuality over homosexuality etc.

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1 INTRODUCING FEMINISTIC PERSPECTIVES TO PARTICPATORY DESIGN

This search in literature explored the intersection of feminism and PD, particularly emphasising feministic perspectives that can be used in the design and the role of the designer. This section illustrates the relevant findings on which the Feminist Staging Moves is based.

1.1 Guiding the Designer's Attention to Feministic Perspectives

Buchmüller (2012) argues that feminism is a certain mindset, which values and perspectives are becoming more relevant for design methodologies; howev-er, which are not fully integrated yet. Buchmüller (2012, n.d.) presents the framework for feminist design research and practice (FEDELOP) (see Table 1), where this study relied on two out of the three approaches by Buchmüller, guiding the designer's attention to feministic perspectives. The third approach does not provide a new feministic approach. It is rather

concerned with the evaluation of design interventions and decisions (Buchmüller, 2012, n.d.). The following section will dig into both the approaches of *feminist standpoint theory* and *poststructuralist feminism* to flesh out their unique contributions, supported by literature regarding PD, and other literature on feminist design approaches.

Table 1: FEDELOP framework from Buchmüller (2012; n.d.), only focussing on feminist standpoint theory and poststructuralist feminism.

Feminist Standpoint Theory Designer-user relation	Poststructuralist feminism Meanings, representations, & artifacts
Focus on designers • Reflect on your standpoint and (stereotypical) assumptions. • Visualise power structures, interests, and goals of each stakeholder Focus on users • dentify and empower marginalized users in the respective context • Side with their voice • Regard them as experts in their daily lives • Establish an emancipated relationship between the designer and users as well as between the users • Integrate them into the whole design process • Increase their societal visibility, acceptance, participation, and freedom of action Focus on gender • Equalize all genders • Degender or undo gender	Focus • Support heterogeneity and diversity • Break with ontological beliefs, and societal conventions and norms • Invent nonconformist, ambiguous, controversial representations and meanings. • Offer new experiences, perspectives, and courses of action • Support critical reflection • Avoid stereotypes, discrimination, and Focus on gender • Pluralize, modify and confuse gender.

Feministic Standpoint Theory

The first approach in the FEDELOP framework is based on feminist standpoint theory (Haraway, 1988; Harding, 1992, 2003). Acknowledging the term introduced by Donna Haraway *situated knowledge*, emphasises that knowledge is always situated within a particular set of experiences and perspectives (Haraway, 1988). Such experiences are not only shaped by gender but by intersection with other social categories such as ethnicity, age, ability, sexuality, education, socioeconomic class, etc. (Buchmüller, 2012, n.d.). This results in an intersectional approach (Crenshaw, 1989), as these categories form the individual position within the societal hierarchy. The primary aim of feminist standpoint theory is to generate knowledge and experiences for marginalized groups such as women, ethnic groups, disabled people, etc., as it offers unique perspectives. Bardzell (2010) argues, that such (new) knowledge from marginalized groups should be recognized and utilized as a resource, rather than being neglected. Regarding the FEDELOP framework, Buchmüller links feminist standpoint theory to design since it has the ability to guide the

designer's attention towards generating knowledge from marginalized groups, making power structures visible to the participants while being aware of their stereotypical assumptions (Buchmüller, 2012, n.d.)

Relating feminist standpoint theory to PD, many similarities exist. Just as feministstandpoint theory, PD values situatedness, where Lucy Kimbell advocated that "We should understand design as a situated contingent set of practices carried out by professional designers and those who engage with designers' activities" (Kimbel, 2011, p. 287). Seeing PD as situated means "there is no universal participatory design process that can be transferred from one situation to the next" (Luck, 2018, p.4). Furthermore, *equalizing power relations* is a core element of PD as the designer should find "ways to give voice [to] those who may be invisible or weaker in organizational or community power structures" (Luck, 2018, p.2). This is further argued by Björgvinsson, Ehn, & Hillgren (2012), who states that a main approach in PD research "has been to organise projects with identifiable stakeholders within an organisation, paying attention to power relations and the empowerment of resources to weak and marginalised groups" (p. 129). The similarities between the two approaches are also recognized by Buchmüller, stating that PD can be compatible with feminist standpoint theory as long as "designers put marginalized groups into the centre of attention, cooperate with them on an emancipated basis and finally avoid the recreation of cultural stereotypes" (Buchmüller, 2012, p. 178).

However, the FEDELOP framework does not provide how to involve marginalized groups or the implications that can occur while doing so. The involvement of marginalised groups is criticised by Costanza-Chock (2020); despite the good intentions of the involvement of participants in traditional PD, it is rather beneficial for professional designers than the communities they intend to serve, since "community members who participate in design processes too often end up providing the raw materials that are processed for value further up the chain" (Costanza-Chock, 2020, p. 90). An additional point of criticism by Costanza-Chock (2020), middle-class participants are in worst-case scenarios invited to suggest small adjustments to justify and legitimate pre-existing plans "determined according to the interests of incumbent power holders and professional lobbyists" (p. 154).

Poststructuralist Feminism
The second approach by Buchmüller (2012, n.d) is based on *poststructuralist feminism* (Butler, 2006), which introduces further dimensions to the general understanding of gender as a concept that is continuously performed and negotiated through language, discourses, and social practices (Butler, 2006). The main aim of poststructuralist feminism is to challenge or deconstruct the traditional binary notion of gender by questioning or subverting normative gender roles and identities. This, argued by Buchmüller, is linked to design methodologies, as it can be done through meanings, representations, and artefacts.

Using artefacts which are inscribed with meanings and representations is not a novelty in human-centred design practices. Luck (2018) argues that objects are actively and continuously used throughout participatory design processes. For example, prototypes or provotypes (Boer & Donovan, 2012; Mogensen, 1994) can be used to test the functions or desired effect of the solutions; design games (Brandt, Messeeter, & Binder, 2008) can mediate a dialogue in various stages of the design process between the involved users and stakeholders; and in the literature, theoretical concepts such as boundary objects (Carlile, 2002) or intermediary objects (Vinck, 2011) can provide ways to analyse which part the materiality plays.

Even though representations, inscriptions, and artefacts are a part of human-centred design methodologies, poststructuralist feminism provides a new perspective to change or question societal norms or the user's perspective "by inventing and establishing new categories of meaning and ways of representation besides gender stereotypes" (Buchmüller, 2012, p. 179). As stereotypical assumptions often are reproduced by the invited participants (Baker, 2018) and by the designer/design team (Costanza-Chock, 2018), the focus on the materials is thus key while designing. As a response, Baker (2018) advocates those participatory processes, should encourage critical awareness.

1.2 *Understanding the Considerations Behind Participatory Design Processes*

The FEDELOP framework guides the designer's attention to certain feministic perspectives; however, it does not connect it to the actual role of the designer. The role of the designer is an ongoing discussion within the fields of engineering and design thinking (Carlgren, Rauth & Elmquist, 2016), where participatory designer Pedersen (2020) states "There seems to be a lack of reflection on how the designers bring these methods into play, what functions they perform, and which methods to use in different situations" (Pedersen, 2020, p. 59). In a similar fashion Korsmeyer, Light & Grocott (2022) argue the fact that co-design literature mainly focuses on the result of the co-design processes, rather than the considerations behind them (p. 3).

Therefore, this study drew on the research from Korsmeyer (2022), which particularly aims for more reflectivity by designers, as this can reveal or/ and evaluate feministic aspects in a co-design process. To do so, Korsmeyer introduces four turning points that "designers can use as reflective [dis][re] orientations for reflecting on the political and ethical implications of their personal roles and contributions to co-design" (Korsmeyer, 2022, p. 112), especially focusing on activities such as workshops (see Table 2).

The focus on self-reflectivity for designers is supported by Bardzell & Bardzell (2011), who is working within the field of feminist Human-Computer-Interaction, arguing ongoing self-questioning "whether the research is delivering on its ambitions to be feminist, improve human quality of life, and undermine rather than reinforce oppressive social structures" (p. 683). Within

Table 2: Description of the four turning points made by Korsmeyer (2021)

1st turning point: The materials	2nd turning point: The tensions
As no materials are neutral, it is necessary to explore how materials, e.g. materials in workshops can reinforce, support, or curtail assumptions and thus the possible outcomes	While the designer acts as a mediator and advocate for the ideas of others, it is important to be aware of the power imbalances between themselves and their values, the organization they represent, and other participants
3rd turning point: The background	**4th turning point: The shifts**
The background evolves around in which way the designer can be aware of the biases on the assumptions they may build the design on, including the influence of their position and the biases that participants unconsciously reinforce	The designer can learn from not only the transformations happening to others in the design process but also understand and explore the change in themselves

their research, they argue the importance of disclosing the researcher's view on society, intellect, and, to the appropriate extent, politic (Bardzell & Bardzell, 2011), i.e. it corresponds with the feminist standpoint theory.

Although Korsmeyer (2022) and Bardzell & Bardzell (2011) provide insights on how the designer can benefit from feministic and critical reflectivity, the insights do not provide how to engage such consideration actively during a participatory design process. Even though Korsmeyer (2022) introduces the four turning points, these emphasise the evaluation of choices rather than the decision-making for design interventions during the process. To draw attention to such, this study utilised the actionable Staging Negotiation Spaces (SNS) framework. SNS is developed by Pedersen (2020), relying on PD tradition (Brodersen, Dindler, & Iversen, 2008; Bødker, Dindler, & Iversen, 2017) and analytic insights from Actor Network Theory (ANT) (Callon, 2001; Latour, 1987). The SNS framework uses the theatical metaphor of the designer as the 'stage director' to expand the role of the designer as one staging negotiations. SNS consists of three aspects (1) Staging Moves (interpretation, framing, and inscription), (2) facilitating negotiations, and (3) (re)framing as a result of

Figure 1: Inspiration from SNS (Pedersen, 2020; Pedersen et al. 2022), entailing same aspects
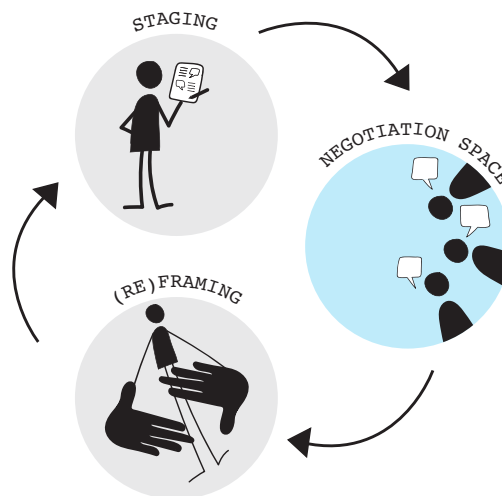
negotiations (Pedersen, 2020) (see Figure 1). The SNS framework has been further developed to enable a deeper and more explicit reflection regarding the designer's navigational and strategical moves in a collaborative process (Pedersen et al., 2022), helping to reveal the strategic preparatory staging efforts which are often neglected in open innovation literature on negotiation (Barchi & Greco, 2018). The further development in SNS contributes to describing the micro-level interaction processes by looking at four staging moves:

- Interpreting the problem/situation (matter of concern), i.e. paying attention to the objects that may frame the negotiations such as collaboration agreements, legislation, budgets, etc.;
- (Re)framing negotiations to motivate specific discussions (e.g., understanding concerns actors may have concerning the problem investigated);
- Producing objects by inscribing this framing into different "props," for example, in the form of design games intended to facilitate mutual learning and dialogue; and
- Inviting other relevant actors to the negotiations, such as users, health professionals, and project managers (Pedersen et al., 2022).

2 *METHODOLOGY*

Besides evaluating relevant literature, this research offers a valuable contribution of empirical knowledge derived from qualitative interviews, serving as the foundation for the established *Feminist Staging Moves*.

Given the focus of this research on PD, it is inherent to engage with actors that are experts within this field, as they possess significant knowledge. This involvement is achieved by conducting seven semi-structured qualitative interviews (DiCicco-Bloom & Crabtree, 2006), which included a test interview and six expert interviews. The interviews were held over a month, two were performed physically and five were held online due to geographical distances. The chosen composition of the experts was primarily driven by practical considerations rather than strategically, except for the test interview.

The participants were invited based on their involvement in areas related to feminism or gender bias, all white women with a connection to the academic world. The participants represented a range of professions, therefore provided a wide scope on how they practice and incorporate feminism in their respective work (see Table 3). It is important to note that the participants are not necessarily experts in PD, however, they all emphasize the engagement of participants in their respective fields.

The SNS framework (Pedersen et al., 2022) was used to guide the interview process. Using the terms of SNS, each interview acted as a negotiation space, where the negotiations between the interviewee, the design team, and former findings from literature and previous interviews were performed. Following each space, the design team undertook the process of reframing. By employing

the SNS framework, the research of this study evolved over time. The search in literature and interviews were performed simultaneously as new literature was provided or referred to in the expert interviews or identified by the design team. As these insights framed the study, the interpretation and thereby research question evolved throughout time.

The Affinity Diagram (Beyer & Holtzblatt, 2015) acted as a valuable tool to code and organize the gathered information from literature and interviews, contributing to the staging moves between the interviews. The Affinity Diagram was performed by fragmenting the complex information that was gathered into statements on post-its. The information in this study has been coded into three groups by colour; green represents *feministic theory*; pink represents literature on t*he interdisciplinary field of feminism and human-*

Table 3: The profession of the interviewee and their area of expertise

Participant	Profession	Area of Expertise
Test-participant	Former student (MSc Sustainable Design) at Aalborg University Copenhagen,	• Working within the field of sustainable engineering • Wrote a Master's Thesis on the "Feminist Mobility System" in Denmark
Expert 1	Postdoctoral Researcher in Interaction Design, The Oslo School of Architecture and Design, Norway	• Working within the field of digital technologies for women's health and well-being • Using speculative fabulation and critical design • Exploring feminism through different standpoints such as Ecofeminism
Expert 2	Senior Lecturer and Head of Research, The Media Design School in Auckland, New Zealand	• Working within the field of Media and have • formerly worked with domestic life and the gender of objects/materials • Using ethnographic methods, speculative fabulation and critical design • Focus on challenging gender and queer inequality through design
Expert 3	PhD fellow in Behavioural Design and Gender Studies in Organizations, Copenhagen Business School, Denmark	• Working within the field of organizational structures • Using behavioural analysis and innovative thinking • Specializing in how to bypass gender bias in organizational structures with a focus on DEIB (Diversity, Equity, Inclusion, and Belonging)
Expert 4	Lab Staff in ETHOS, IT University of Copenhagen, Denmark	• Working within the field of IT and tech • Using the intersection of digital methods, ethnographic inquiry, and speculative fabulation • Support feminist approaches within the community of IT University of Copenhagen
Expert 5	Research fellow in Emerging Technologies Research Lab, Monash University, Australia	• Working within the field of design methodologies, focussing on workshops • Using critical engagement, co-design, and design thinking. • Investigating the considerations while working with feminism in design
Expert 6	Freelancer and Visiting Professor at the Technical University of Dresden, Germany	• Working within the field of IT engineering • Focuses on gender, queer, and diversity studies in technology and science

centred design methods; and blue represents *findings from expert interviews*. After fragmenting the information, the post-its' were placed in groups as correlations occurred, still retaining the detailed information. This was continuously done throughout the whole process. As the literature search and interviews were performed iterative, creating new correlations and groups were formed due to new information, which contributed to new interpretations, (re)framings, and inscriptions for the next spaces.

3 STAGING MOVES TO EXPLORE FEMINISTIC APPROACHES

This section illustrates the design team's *staging moves* behind the interviews (see Figure 2), including the interview findings. Previous to the six expert interviews, a test interview was strategically conducted. As the test interviewee has similar methodological knowledge compared to the design team and has prior experience concerning feminism in the field of engineering, the test participant was able to grasp the goal of this research. As a result, this interview was used to assess the efficacy of the structure of the interview guide and the format of the design games, which were both reframed based on the findings.

Figure 2: The Staging of this Research
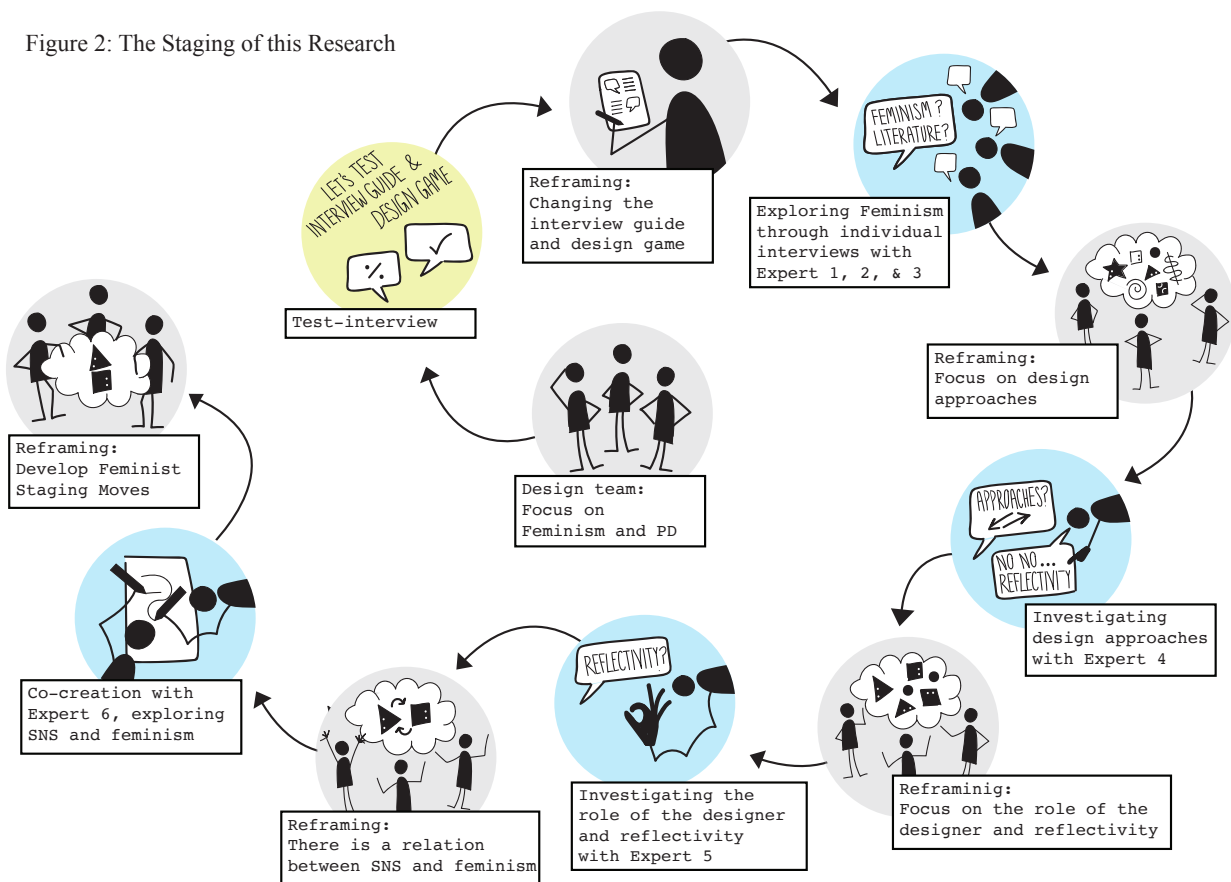
Besides the test interview, all the expert interviews were structured into three parts, encompassing 1) t*he background, 2) feminist design approaches,* and *3) design activity* (See table 4). To facilitate these discussions, an interview guide and design game were produced. The interview guide served as a structure for each interview, with the flexibility to incorporate additional questions or exclude certain ones, depending on the natural flow of the conversation. The interview guide was adjusted to accommodate the expertise of the interviewee and the stage of the study. While the interview guide itself is not a tangible object, it was still inscribed with newly acquired findings to motivate the discussions based on the interpretation(s) and (re)framing(s).

Table 4: The Structure of Each Interview

1 Background	The purpose of this part has been to understand the fundamental background, including assumptions and worldview, of the participants
2 Feminist Design Activities	The purpose of this part has been to understand how feminism can be practised in participatory design processes
3 Design Activity	The purpose of this part has been to test the findings from literature and formerly conducted interviews

The participants were actively engaged through a design game (Brandt et. al, 2008) during the final part of the interviews. Given that most of the interviews took place online, the design game was developed using the online platform Miro. This mediated a conversation regarding the findings explored in the literature and previous interviews. For one of the in-person meetings, a similar object was made in a physical form. Although the design game evolved, its core structure consisted of numerous statements that interviewees interacted with. The object was low-fidelity to capture the impression of work-in-progress. The design game was modified over time in response to new findings and its efficacy. Furthermore, after (re)framing each negotiating space, new insights were inscribed into the statements in the design game.

3.1 Identifying the Multiple Ways of Working with Feminism in Design

As the outset of this study relied on the relevant literature, including feministic frameworks and theories, the design team had limited knowledge of how feministic approaches are carried out in real-world design. Therefore, the design team aimed to investigate how such approaches can be performed while designing. The design team conducted three individual interviews, with Expert 1, Expert 2, and Expert 3, with the aim to secure a variety of input before making a specific interpretation. Each interview was staged to be aligned with the participant's practical experiences, which were inscribed in the interview guide: with Expert 1, the focus was on the participant's previous feministic design projects; with Expert 2, the focus was on a Feministic Design Methodology, which was developed by the participant, including how this methodology could be performed; and with Expert 3, the focus was on the participant's practical work on how to bypass gender bias in organizational structures.

The interviews showed various ways to approach design considering feministic aspects, affected by the context as well as the designer's subjectivity and feministic standpoint. Expert 1 demonstrated how feministic theories might be used as an outset for a project, and how emotions and embodiment in activities can be an effective instrument for feministic approaches. Expert 2 stated that gaining inspiration from the past helps to generate alternative visions for the future. Expert 3 tried to change the practices of organisational structures rather than their mindsets, through interventions. For this reason, Expert 3 strategically avoided using the term "feminism" in her work, instead embracing the lingo of the involved organisation. Experts 1 and 2, on the other hand, are more open about their use of feminism in their work. Furthermore, the context of the design project impacts method choices and the way the designer handles their chosen approach. Expert 2 stated that her students struggled to move away from stereotype reproduction when creating Personas. On the contrary, according to Expert 3, personas contributed to breaking down the binary idea of gender. This demonstrates that the 'situatedness' of feministic standpoint theory also influences the choice of method.

Given that the outset of the interviews was based on literature, the design team found it necessary to test such findings actively with the interviewees. The design team understood how feminism can guide the designer's attention toward feministic perspectives, however, it does not provide a method for the designer to actively engage these feministic considerations during a participatory design process. Therefore, this was tested by forming a statement in the design game based on this knowledge gap, encouraging a conversation. In the interviews, this understanding was confirmed by Expert 2, stressing the goal of her work was "narrowing the gap between [feminist] theory and practise" (personal correspondence, 3 April), whereas Expert 3 more specifically emphasized the "need to build a bridge from academia to practise [in terms of feminism], and that's why we need to speak the language of the people we're trying to change" (Personal communication, April 2023). Even though many other findings from the literature were tested as well, this finding played a central role in the reframing.

3.2 Identifying the Need for Reflectivity while Designing

Even though the prior space demonstrated how feminism might be practised in variety of ways, all of the experts employed participation in their research. The design team reframed the spaces and saw the potential of how feminism and participatory design might benefit from each other; making feministic approaches actionable; and securing feministic approaches while designing. Resulting in a change in the format of the design game, which was then used during the interview with Expert 4. Instead of utilising statements on post-its in the design game, it was the identified design approaches from prior interviews, the experts would engage with. These were written down on post-its, and the expert would then rate them on a scale of "not effective" to "effective", with the purpose of resulting in a discussion regarding each of the design approaches and their different contributions to the design process, in addition to

their differences. However, it shown in the interview with Expert 4, the format of the new design game focused too much on specific design approaches, rather than the role of the designer. It became clear during the interview that most of the design approaches had the potential of being helpful when used in the right context. Expert 4 responded to the design game by emphasizing the necessity of reflecting on previous processes to create a more feministic perspective within participatory design processes, regardless of the precise method, technique or tool used. Expert 4 explicitly stated some of the self-reflective questions they posed during a project about creating a feministic Hackathon: "How do we want to work within the team?", "Who are we giving a platform to?", "How do we word it, so people feel safe?", "Can everybody understand the language?", "Is it wheelchair accessible?", "Who are we re-distributing wealth to?".

In the reframing of this space, the design team identified that in order to understand how feminism and PD might benefit from each other, the focus should lie on the role of the designer and the potential of reflectivity. To encourage this reframing for the next space with Expert 5, the inscribed design game was changed back to the "agree-disagree" game, which had previously been effective to encourage conversation. Furthermore, the statements in the design game were changed to focus more on the designer's role and the reflective character of feminism. This interpretation was backed by Expert 5, emphasising the importance of learning by doing and reflecting on what you learn as a designer by evaluating prior processes, stating "You need practice experience first before you can really reflect on what you learned about feminism from it" (Personal communication, 17 April 2023).

The interviews with Expert 4 and Expert 5 showed how critical reflectiveness, derived from feminism, can be used by the designer to evolve their approaches. This can be done by evaluating certain aspects of the project, such as recruitment, used materials, individual assumptions, etc. However, the interviews also showed, that the responsibility for such reflections depends on the individual designer, taking into consideration their expertise and experiences. It can be difficult to adapt to such reflections if the designer is not provided with or exposed to such, as this reflectivity entirely depends on the particular designer. Furthermore, it can be hard to target these reflections as they can seem unmanageable and complex to employ. In conclusion, even though critical reflectivity provides a potential for learning processes for the designer, the designer does not necessarily know how to navigate these throughout a participatory design process.

3.3 Exploring the Feministic Contribution to the SNS framework.

By analysing the findings from these interviews, the design team saw how critical reflectivity could be considered actively in a participatory design process throughout the SNS framework. As SNS "does not offer a specific recipe, but a strategic and actionable approach for engaging multiple actors in innovation processes" (Pedersen et al., 2022, p. 12), it can provide features of actionability

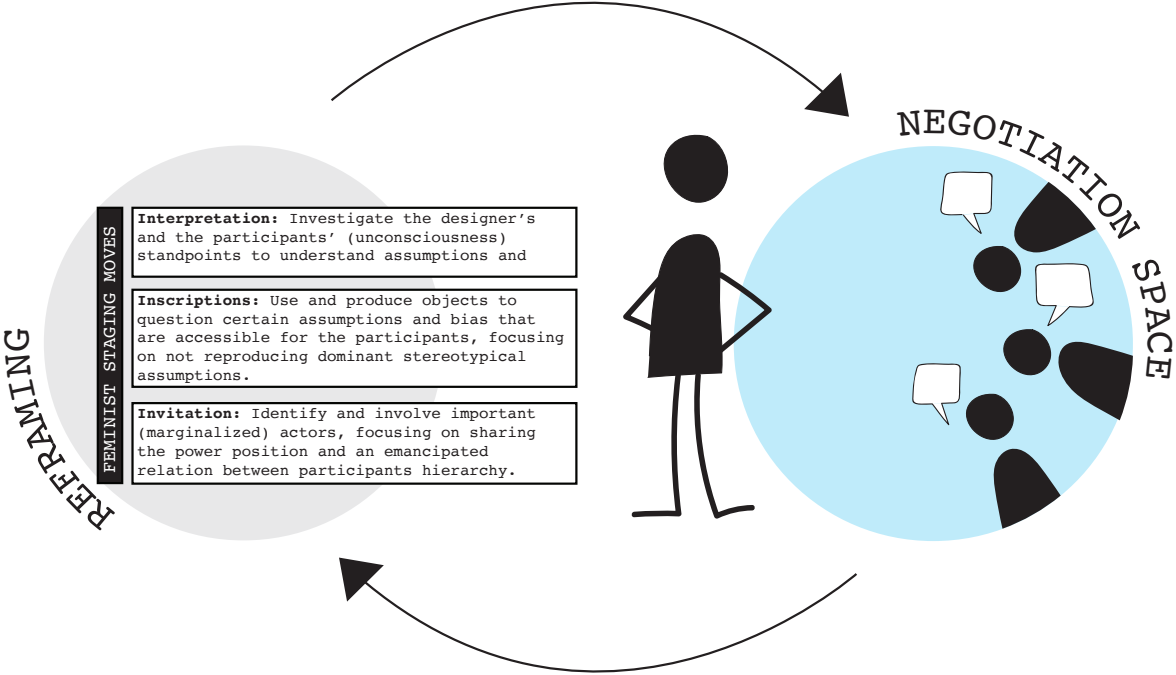and a structured framework. This led to the reframing of how feminism and SNS may complement each other:

- Feminism encourages critical reflection in participation processes.
- SNS offers an adaptable, strategic, and actionable framework during the participation process.

From this reframing, the last interview with Expert 6 was set up as a co-creation (Sanders & Stappers, 2008) session. As the interviewee had sent a PowerPoint to the design team before the interview, regarding her earlier research, this served as a mediating object, encouraging a discussion between our findings in prior interviews and her literature. Instead of a design game in the last part of the interview, the design team presented SNS by using an illustration of the framework in Miro. To facilitate a discussion of how SNS and feminism can contribute to each other, multiple blank post-its' were placed around the presented SNS illustration in Miro. As the different aspects of SNS were presented, the post-its invited to a discussion between the design team and Expert 6, while adding how and where correlations between the approaches occurred. Expert 6 acted as the advocator for feministic viewpoints in this negotiating space, while the design team pushed PD and SNS. However, this space was influenced by language barriers and technical issues, which affected the degree of new insights in the co-creation session. Yet, one main key finding was identified: Expert 6 saw the similarities between SNS and feminism. This space thus laid the groundwork for the contribution of this research: *Feminist Staging Moves*.

4 *FEMINIST STAGING MOVES*

This study contributes with the Feminist Staging Moves, an expansion of the Staging Negotiation Spaces Framework (Pedersen, 2020; Pedersen et al., 2022) with critical reflectiveness derived from feminism. Thereby the Feminist Staging Moves explicitly addresses feministic perspectives in the staging moves for the designer, providing an actionable framework (see Figure 3). The feministic contribution to the SNS framework lies within the consideration of the (re)framing, including interpretation, inscription, and invitation, expanding staging moves with critical reflections for the designer to strengthen their feministic work. This means, that Feminist Staging Moves does neither explore, investigate, or expand the actual facilitation of the negotiation spaces, i.e. this study relies on Pedersen (2020). Although the following section separates up the staging moves, they are interlinked. This means, they cannot be split up, since they consist of iterative and simultaneous moves that affect each other through the staging, negotiations and (re)framings. The contribution is supported with specific critical reflective questions to provide examples of the Feminist Staging Moves (see Table 5). These questions can be used as an outset for further critical and reflective questions, sparking the designer's creativity to develop additional

Figure 3: Illustration of Feminist Staging Moves. The figure is inspired by SNS, figure 3 (Pedersen et al., 2022, p. 10), modified to adapt to this study.

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Table 5: Reflective question to guide the designer's attention to feministic perspectives. Questions are inspired by the qualitative interviews, the GERD-model (Draude & Maaß, 2021) and Baker's, soon to be published, book Designing Gender A Feminist Toolkit (Baker, 2023).

Staging Move	Examples of Reflective Questions
Interpretation	• How are you positioned? How does that affect your understanding? • Who are you listening to in this research? Who are you reading from? • What are your blind spots in terms of different oppressions? Are you or the participants marginalized by race, class, disabilities, language, sexuality etc.? • How do you deal with conflicting values in your project? • How transparent is your decision process for others? • How does your idealistic strive, regarding feminism and PD, conflict with practical challenges such as money, time, resource, etc.?
Invitation	• Who is included, and who is excluded? • Who are you giving a voice in this project? Who is it that we're uplifting? • Who is it that we're redistributing wealth to? • Whose interests drive your research? • What new perspectives might be opened up if we include a marginalized group in our concepts? • Have you allowed space for people to express themselves, rather than fitting into predetermined categories? • How do you make sure that your participants are being valued (e.g., financially or with concrete immediate benefit) for their contribution? • How do you balance practical issues regarding recruitment with the ideals of feminism and PD?
Inscriptions	• What materials and objects (scenarios, representations, visualizations, and images etc.) are commonly used in our field of research? Do they mirror a diverse group of people and contexts? Do they reinforce stereotypes? Can you try out new ones and experiment with them? • How do you word and communicate through materials, to open up equal conversation and discussion where everyone feels safe to share? • How do you address different target groups in specific ways? • What kind of aesthetic choices are presented in the materials? E.g., colour, font, patterns, symbols, and shapes can reproduce dominant stereotypical assumptions.

Interpretation

In Feminist Staging Moves the interpretation focuses on the designer's and the participants' (unconsciousness) standpoints to understand assumptions and biases. It relies on the SNS framework, where the designer must "investigate and articulate their own and other actors' interpretation of the problem framing" (Pedersen et al., 2022, p. 10). However, the Feminist Staging Moves explicitly addresses, that the bias of the designer and participant will always affect the design choices. Therefore, the interpretation aims to explore and reflect upon the designer's role as well as the participant's position, including your feminist standpoints, interest, background, etc. Furthermore, the designer should stay in what feels uncomfortable and the tensions as this has the potential for expanding your feministic standpoint.

Inscriptions

Feminist Staging Moves focuses on using and producing objects to question certain assumptions and biases that are accessible for the participants, focusing on not reproducing dominant stereotypical assumptions. Relying on the SNS, arguing for the need of "producing objects by inscribing this framing

into 'props', … to represent an investigated problem" (Pedersen et al., p. 9). Therefore, Feminist Staging Moves unfolds the SNS framework by specifically addressing how such production of objects can contribute to questioning conventional ways of representation to either empower, challenge or provoke the perspectives or behaviours of the participants. Just as SNS, Feminist Staging Moves is concerned that the objects are aligned with the language of the participants, i.e. the translation of objects should correspond with the context. However, Feminist Staging Moves emphasizes that this should not be at the expense of the reproduction of dominant stereotypes.

Invitation
In Feminist Staging Moves, the invitation is centred around the identification and involvement of important (marginalized) actors to share power positions and an emancipated relation between participations hierarchy. Just as in the SNS framework, this emphasizes to "identify important actors and involve them in due course" (Pedersen et al, 2022, p. 11). However, Feminist Staging Moves explicitly addresses the importance of involving marginalized groups of society as well as identifying the marginalized groups in specific projects and regarding them as experts and being the advocator for their voice(s). Many considerations lay behind such involvement, e.g. the subordinated groups should be able to talk freely without consequences, or the vulnerable groups should gain something actively for their participation.

5 DISCUSSION

5.1 The Requirements for Using Feminist Staging Moves
Feminist Staging Moves provides the designer with critical questions to reflect on the staging moves, a boundary condition however is the capability of the designer to judge their work regarding feministic perspectives. The design team acknowledges that in order to do so, the designer needs to have sufficient knowledge of feminism. If the knowledge is limited, it can be a challenge to assess Feminist Staging Moves. This might be a limitation for new designers in the field since it can be hard to know where to begin; what to begin with; and so on. As Expert 4 and Expert 5 showed, which reflections a designer is able to make, rely on the expertise and experience of the designer.

Furthermore, a requisite of working with the Feminist Staging Moves, is that the designer must acknowledge and recognise that there are oppressions in society, and that these are reflected in the way they design. If the designer is not aware of the fact that certain groups get oppressed, it will be challenging for the designer to identify their own bias and change the oppression. However, this study acknowledges the difficulty and impossibility to identify all of your own biases and assumptions as it is a part of social and cultural structures, Expert 3 confirms this by saying "I don't believe we can remove bias of the brain" (Personal communication, 4 April 2023).

This study aims to bring attention to feminism in the world of design and hopes to inspire and motivate designers to explore in which way they can use their view on feminism during their design process. The literature review provides a foundation of feministic knowledge, hopefully helping the designer to get this ability; however, this is a limited amount compared to the rich field of feminism. Nevertheless, the design team does see the potential of giving the designer more feministic knowledge. Therefore, we encourage designers to explore different kinds of oppression, for example, eco-feminism, the matrix of domination, intersectionality, and other traditions within feminism to get a richer understanding of different forms of oppression that are included in feminism. As well as reading: Design Justice (Costanza-Chock, 2020), Invisible Women (Criado-Perez, 2020), and the soon-to-be-published book by Sarah Elsie Baker Designing Gender (Baker, 2023).

5.2 Practical Issues while Applying Feminist Staging Moves

A current discussion in design is the tension between the focus on the process and the result (Costanza-Chock, 2020), which this research contributes to. Since Feminist Staging Moves focuses on the evolvement of the designer, regarding feminism, emphasising awareness, rather than telling the designer exactly how to act. Critics could argue that it is not realistic to incorporate all those ideals since the design outcome will be restricted due to limited resources. This critique is even stronger as Feminist Staging Moves is not tested, i.e. it is unknown if it is manageable for the designer to apply it in real life.

The design team are aware of the practical limitations that exist in a design project. Despite the idealistic strive in both PD and feminism, the reality of involving social groups can be challenging. Bardzell (2010) addresses the participation problem as real participation is pragmatically difficult to achieve. This is supported by Expert 1 argues "Mobilizing participation through-out the project is hard because you often come with a certain mindset and goal while recruiting people" (Personal communication, 28 March 2023) and Expert 5, stating that since the outcome of your design is highly affected by the involved participants, the recruitment of participants in a design process can be seen as one of the most fundamental processes to secure a feministic approach (Personal communication, 17 April 2023). Furthermore, the interviews with both Expert 1 and Expert 5 showed that their design process took an unexpected turn, due to the recruitment difficulties. Expert 1 wanted to have a diverse group of people who experienced monthly bleeding, including non-binary and trans folks. She ended up with 10 cis-girls from a sports high school, which changed the interpretation of the problem. Expert 5 had a similar experience regarding recruitment. By reflecting upon this experience, she learned that she would rather postpone or cancel the project when the partici-pant did not meet the requirements set, as it is important to (her) feminism that you involve the marginalized group you design for.

Another example that showcases the practical challenges in real life is the involvement of marginalised groups, that contributes to the design process and are often not compensated. This is seen in the interviews, where Expert 4 clarifies how it is not enough just to involve marginalized groups and side with their voice. Costanza-Chock (2020) states that marginalized groups do not benefit from their engagement in projects, which is further argued by Expert 5, stressing the need for designers to be aware of what they are taking from the involved participants in terms of data and what they are providing back to them. For a vulnerable marginalized group this is crucial since time is money.

As the discussion in the literature shows, challenges within process-oriented studies exist. Although challenges occur in real life and the idealistic drive can be challenging to practice, Feminist Staging Moves addresses which aspects the designer has to be especially sensitive to. The Feminist Staging Moves encourages the designer to reflect upon such issues during the participation process, being aware of the limitations of a given project and considering what is the best thing to guarantee the feministic purpose. Furthermore, these practical challenges can be seen as drivers to encourage the designer to evaluate their process and learn from them.

5.3 The Relevance of Feminist Staging Moves

PD-practitioners could criticise the contribution of Feminist Staging Moves, arguing that SNS already has feministic perspectives included in its considerations of "Which actors might be relevant to include in which discussions at which time in the process as well as the production and circulation of material objects and how these may enable a particular exchange or perspectives and facilitate reframing" (Pedersen et al., 2022, s. 5). Bannon et al. (2019) address that PD has lost some of its identity, moreover it specifically could inform and be informed by feminism (Bardzell, 2018; Buchmüller, 2012; Korsmeyer, 2022). The contribution of Feminist Staging Moves draws specific attention to the feministic perspectives in the small strategic staging moves, which the designer performs during a participatory process. The design team advocates for explicit attention to feministic perspectives as it is shown how inequality is embedded in design solutions, reproducing oppression.

On the other hand, feminist design practitioners could criticise Feminist Staging Moves, by arguing that it determines how feminism should be practiced in design. For example, Expert 5 stated that the gap between feminist theory

and practice in design can be beneficial as the designer needs to figure out their way of practising feminism. The design team acknowledges this reasoning; however, Feminist Staging Moves is flexible, and therefore gives room to, and even encourages, the designer to evolve gradually as new critical reflections occur. Moreover, this study is written within the field of engineering and innovation, whereas the design team expects that not many practitioners will be exposed to exploring this gap.

5.4 Limits with Methodology

The empirical insight of this research is based on seven interviews. Although the fields that the experts work in with feminism differ from each other, there is a limitation in the degree of diversity. First, all the experts are working in the academic field. A critique circulating amongst feminists is that feminism is taking out of the practical realm into the academic world. This excludes many feminists since the academic world is often for privileged people, which therefore does not give an inclusive perspective about feminism. The fact that the participants are all white and situated in countries of the global North, just as the design team themselves, contributes to a less diverse and only partially represents what happens in the feministic world. The design team is aware that if the experts were more diverse, this could have influenced the result.

Moreover, all the experts were recruited at the start of the empirical phase of this study due to practical reasons. The order of the expert interviews was determined by the availability of both the experts and the design team and therefore it was planned a month in advance. The design team acknowledges that the order of the expert interviews can have influenced our outcome as the reframing of this study could have taken another turn. Due to the iterative aspect of SNS, including the reframing of the interpretation, inscription and invitation, all the interviews were different from each other. Resulting in difficult and sometimes impossible comparisons between the answers of the interviewees. However, the design team see the value of SNS, making us able to stage the interview regarding the evolvement of the study.

5.5 Follow-up Research

In additional research, Feminist Staging Moves needs to be qualified by user tests. The test should be with potential users; designers that work with PD already. The scope of the testing should include multiple factors. First, how can designers work with the Feministic Staging Moves; and can designers bring this into practice? Second, it should be tested if designers have the required knowledge about feminism to actually qualify their process in terms of feminism, influencing how Feminist Staging Moves offers a feministic approach. Finally, how does Feministic Staging Moves affect their upcoming projects; are they becoming aware of their feminism; and do they want to expand this further in upcoming processes?

6 CONCLUSION

Since inequalities are reproduced throughout a design process, and embedded in the final design, this study demonstrates the value of including feminist perspectives into participatory design. The search for literature regarding the intersection of feministic approaches and participatory design demonstrates how the designer can benefit from the reflective nature of feministic approaches. However, current feminist approaches were limited in their capability to guide the designer on how to actively interact with feministic reflectivity throughout a participatory design process. This study introduces Feminist Staging Moves, by expanding the already existing framework of Staging Negotiation Spaces (Pedersen, 2020; Pedersen, Bogers, & Clausen, 2022) using feministic perspectives. The expansion allows SNS and feminism to strengthen each other: the critical reflectivity of feminism strengthens the initial beliefs of PD, which SNS relies on, whereas SNS provide an actionable framework for the designer to practice such. In order to navigate in feministic perspectives, we encourage participatory designers to use the contribution as a beginning point for their feministic journey. Feminist Staging Moves is neither tested nor explored how to use in real life, thus all finding it interesting are encouraged to explore its opportunities. The design team acknowledged the practical limitations, that can occur while striving to be idealistic. Nevertheless, due to the ontological beliefs of this design team, we do not see practical challenges as an excuse for not striving for your ideals; without such strive things will never change.

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