

PLAYING WITH BINARIES:
GENDER RELATIONS IN TOY DESIGN

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HAVVA BİLGE KOYUN

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submitted by **Havva Bilge Koyun** in partial fulfillment of the requirements for the degree of **Master of Science in Industrial Design, Middle East Technical University** by,

Prof. Dr. Halil Kalıpçılar
Dean, Graduate School of **Natural and Applied Sciences**

Prof. Dr. Gülay Hasdoğın
Head of the Department, **Industrial Design**

Assist. Prof. Dr. Damla Tonuk
Supervisor, **Industrial Design, METU**

Assoc. Prof. Dr. Pınar Kaygan
Co-Supervisor, Department of **Technology and Innovation, University of Southern Denmark**

Examining Committee Members:

Assist. Prof. Dr. Yekta Bakırlıoğlu
Industrial Design, METU

Assist. Prof. Dr. Damla Tonuk
Industrial Design, METU

Assist. Prof. Dr. Aren Emre Kurtgözü
Visual Communication Design, TED University

Date: 10.12.2021

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name Last name: Koyun, Havva Bilge

Signature:

ABSTRACT

PLAYING WITH BINARIES: GENDER RELATIONS IN TOY DESIGN

Koyun, Havva Bilge
Master of Science, Industrial Design
Supervisor: Assist. Prof. Dr. Damla Tonuk

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In this study, I explore the ways in which gender binaries are materialized through design processes in different toy design practices. I frame it with a body of literature that considers gender as a socially constructed phenomenon that is naturalized through material and discursive repetitions. Design as a material practice consists of multi-layered entanglements in which intersected oppressions and inequalities based on gender, sexual identity, class, ethnicity are both constructed and reproduced. Toy design specifically has been in the limelight within design areas because of its entrenched traditional binary gender segregation practices from design brief to toys' placement on shelves and its possibility to shape its user group, which is characterized by their vulnerability. Even if the toy design itself is emblematic for reproducing the 'pinks and blues' polarization, it actually harbors a variety of material practices and complex relations in which all actors temporarily co-construct gender with momentary interactions. To provide a perspective into the multifaceted social and technical relationships, I identified three designers who are situated in different relationships and conducted interviews with these designers and members from communities that these designers were in close contact with. I draw three main

conclusions on reproduction and deconstruction mechanisms of gendered materialities in design: The temporary fixations of designers and products in the binarized system reproduces gendered materialities, mobility of designers and products in this system engender different socio-material and socio-technical encounters that lead to both reproduction and deconstruction of gendered materialities, material participation that based on transformative and holistic gender-deconstructive approach not just unhinges but reconstructs gender norms through communities.

Keywords: Toy Design, Materialization of Gender, Materialized Participation, Co-construction of Designer and User

ÖZ

İKİLİKLERLE OYNAMAK: OYUNCAK TASARIMINDA TOPLUMSAL CİNSİYET İLİŞKİLERİ

Koyun, Havva Bilge
Yüksek Lisans, Endüstri Ürünleri Tasarımı
Tez Yöneticisi: Dr. Öğr. Üyesi Damla Tonuk

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Çalışma, farklı oyuncak tasarım pratiklerinde toplumsal cinsiyet ikililerinin tasarım süreçleri aracılığıyla hangi şekillerde maddeselleştirildiklerini araştırmaktadır. Bu çalışmayı cinsiyeti toplumsal bir inşa olarak gören ve cinsiyetin hem maddi hem de söylemsel tekrarlar yoluyla doğallaştırıldığını öne süren bir literatür bütünü üstüne kuruyorum. Maddi bir pratik olarak tasarım, toplumsal cinsiyet, cinsel kimlik, sınıf, etnik kökene dayalı kesişen baskı ve eşitsizliklerin hem inşa edildiği hem de yeniden üretildiği çok katmanlı karmaşık ilişkilerden oluşmaktadır. Oyuncak tasarımı, tasarımın ilk aşamasından oyuncakların raflara yerleştirilmesine kadar, her şeyi ikili cinsiyete göre ayırmaktan, savunmasız sayılabilecek kullanıcı grubunu şekillendirmesine kadar cinsiyetli geleneklerinden dolayı tasarım alanları arasında ilgi odağı olagelmıştır. Oyuncak tasarımı 'pembe ve mavi' kutuplaşmasını yeniden ürettiği için sembolik olsa da, aslında içinde tüm aktörlerin toplumsal cinsiyet ilişkilerini anlık etkileşimlerle geçici olarak inşa ettiği çeşitli maddi pratikleri ve karmaşık ilişkileri barındırmaktadır. Çok yönlü sosyal ve teknik ilişkilere ilgili bir bakış açısı sağlaması için farklı bağlantılar içinde olan üç oyuncak tasarımcı ve bu tasarımcıların ilişki içinde olduğu toplulukların üyeleriyle röportajlar yaptım. Bu çalışmanın sonucunda tasarımda cinsiyetlendirilmiş maddiliklerin yeniden üretim ve

yapıbozum mekanizmaları hakkında üç ana sonuç çıkardım: İkileştirilmiş sistemde tasarımcıların ve ürünlerin geçici sabitlenmeleri cinsiyetlendirilmiş maddesellikleri yeniden üretir, tasarımcıların ve ürünlerin bu sistemdeki hareketliliği farklı sosyo-maddesel ve sosyo-teknik karşılaşmalara yol açar ve bu cinsiyetli materyalitenin hem yeniden üretimine hem de yapısökümüne yol açabilmektedir, dönüştürücü ve bütüncül cinsiyet-yapısökümcü yaklaşıma dayalı maddi katılım, cinsiyet normlarını topluluklar aracılığıyla yerinden oynatmakla kalmaz, aynı zamanda yeniden yapılandırır.

Anahtar Kelimeler: Oyuncak Tasarımı, Toplumsal Cinsiyetin Maddileşmesi, Maddileşen Katılım, Tasarımcı ve Kullanıcının Karşılıklı İnşası

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CHAPTER 1

INTRODUCTION

In this introduction chapter, first, I present the background of the study with a glimpse of my personal journey as a feminist designer and researcher, and mainly past and current studies in the intersection of design, gender studies, and feminist STS. Then I explain the aim and the scope of the study, followed by main and sub-research questions. Lastly, I present the structure of this thesis before I move on to the literature review.

1.1 Background of the Study

Design as a world-making practice reproduces gender norms through materialization, which shapes today and reflects the future. Toy design particularly is the first field that comes to mind considering gender and design relationships because of its segregation practices in every step of the product cycle. Anyone who enters a toy store can observe dualities in toys at first glance: pinks and blues. As actors backstage of the toys' debut, designers consciously and unconsciously grasp the materialization of the duality beyond color choices on multiple levels. On the other side of this debut, toys are a peculiar product category that its user and purchaser are usually different, which makes designers' decisions in the process even more complex. Beyond all of these, toys also have drawn public attention with their considerably vulnerable user group since they shape the material perception of their user in a segregated way.

Material perception fostered in our childhood, especially with toys and clothing, builds our worlds. It is one of the proponents of the performance of gender. It extends

over our behavior by establishing how we are supposed to act, establishing the *appropriateness* while we are collecting memories of rights and wrongs, both material and discursive. Sara Ahmed (2017) claims that “Feminist work is often memory work,” recalling and unpacking our “experiences of feeling wronged,” those tiny moments *appropriateness* is built (p. 51). One of them was a question I posed when I was playing by myself as a child: “Is it right for me to play cars?” A simple question for a norm-fitting girl who has not been policed for her toys and games yet “feeling wronged.” However, norm-fitting femininity was not the solution, too, since it was *inferior*. Later, in the process, I became a feminist, and I realized there is no option for femme people to collect rights; it was either constant disturbance of behaviors, bodies, clothes, acts, expressions, or “feeling wronged.” Simultaneously, I turned to my profession, product design, and questioned the apparent binary user segregations from the methods we used, such as persona, to the visual language we adapted to our products. In particular, a group project in which we designed a trimmer and epilator exposed how form, function, and even ergonomics are constructed in binary without any discussion or hesitation. Designing an *appropriate* trimmer with the *right* visual language for the right *hand*, even the hygienic behaviors between *men* and *women* were all considered pre-defined. For me, the discussion was not the necessity of this segregation but the process of integrating binary gender norms into products. How do designers intentionally or unintentionally construct or sustain a binary gendered material world? Hence, I gravitate to my profession as one of the sources of my personal “experience of feeling wronged” and its relation to the materiality of gender performance.

Regardless of feminist sensibilities, it is impossible not to notice the relationship between the construction of gender and design. However, feminism as a practice of re-assembling all parts of life, including professions (Ahmed, 2017), unfolded this relationship layer by layer for me. Whilst I am pursuing pre-definitions that are pertinent to material constructs of gender, I went deep down in design literature. I re-assembled the conceptions of design from scratch by reconsidering designer-user relationships (Cassell, 1998; Greenbaum, 1991), gendered construction of products

(Aaltojärvi, 2009; H. Kaygan, P. Kaygan & Demir, 2019; Kirkham, 1996; Oudshoorn, Rommes, 2014; Rommes & Stienstra, 2004; Rommes, Bos & Geerdink, 2011; Sparke, 1995; van Oost, 2003), gender hierarchies that stem from design practice (Cockburn, 1985; Cockburn & First-Dilić, 1994; Cockburn & Ormrod, 1993), and gender hierarchies within design profession (Buckley, 1986; Clegg & Mayfield, 1999; Gorman, 2001; P. Kaygan, 2014, 2016). As a feminist researcher and designer, re-assembling design and underpinning problems provided me motivation to pursue this research because of the necessity to understand the gendering mechanisms within design before transforming them. With this motivation, I went back to toy design, the practice that builds our material world, probably one of our earliest *wrongs* as one of the material bridges between social gender hierarchies and our forged gender expression.

The toy industry's tradition of polarization based on binary gender conceptualization sometimes starts with toy companies' corporate divisions as girls and boys. The design process accompanied by the marketing of the toys guides this division by assigning different toys, use scenarios, characteristics, traits, forms, colors to binary gender. However, recently, with the rise of feminism, increasing awareness of gender equality reflects on the toy industry as well. To exemplify, Hasbro eliminated the boys and girls division from the company (Teodorczuk, 2017), Barbie's producer Mattel launched its first gender-neutral doll (Dockterman, 2019), and in the days when I was writing this thesis, Lego launched "Ready for the Girls" campaign to overcome gender-bias in the toys (Lego, 2021). These three largest toy companies still foster gender stereotypes, yet these occasions indicate a wave of change in the industry, material production, and in conjunction with these, transformation in/of design which harbors many material practices. There is also a growing body of literature that recognizes the importance of the relationship between design and gender in line with this wave of change. However, in the practice and literature, toy design is still perceived as gendered related to its monolithic perception that consists of these larger companies.

Design scholars have taken on the issue of gendered toys and offered methods to reach inclusive designs. Rommes, Bos, and Geerdink (2011) analyze computer games with gender script, explore limiting effects of gender stereotypical games with users, and complete the study by interviewing game companies to determine possible interventions that the design process can offer. Similarly, the gender crossover approach developed by Stienstra (2003) attempts to incorporate toy preferences of girls and boys restricted in the binary to design gender-inclusive toys.

Yet still, since the user group of the toys learns and explores the world with play, gendered toys have been accused of limiting children as well as contributing to establishing gender-based hierarchies from an early age. Kara (2018) conducted a study on children's preferences of gendered toys and found out that boys rely on gender stereotypes more, limit themselves to play with boys toys which might reflect the first steps towards material hierarchy. Attfield (1996) also argues this hierarchy by tracing gender stereotypes permeated to Action Man and Barbie in visual and also functional dimensions. While Action Man signifies activity, toughness, and power with mobilized arms, legs, and joints in the toy, Barbie occurs as a symbol of the docile body of the women, which can be decorated with different clothes (Attfield, 1996). Multiple layers that design conveys gender asymmetries and their echoes on a user group lead me to focus on designers' role in the material relations of gender more.

Binary material constructions in design are not confined to toys; Cockburn and Omrod (1993) consider domestic technologies as feminine yet apparatus of women's control since these technologies are created by men (Cockburn, 1985). However, gendered representations in products similar to toys are not one-way construction determined by designers; it is rather complex entanglements. Ehrnberger, Räsänen, and Ilstedt (2012) argue that some product categories such as drills or hand blenders are inherently gendered, while the study of H. Kaygan et al. (2019) reveals that pens represent a spectrum of femininities and masculinities, including a hegemonic form of masculinity. The given complexity of gendered products in the literature shows even further possibilities to explore in the area for research.

Moreover, some scholars developed gender script, and some others adapted it to analyze gendered user representations of the products in three dimensions: symbolic by form, structural by domestic/public binary, and identity by feminine/masculine assigned characteristics (Faulkner, 2000b, 2000a; Oudshoorn et al., 2004; Rommes et al., 2011; van Oost, 2003). On top of these genderings, many scholars claim that hierarchy is constructed between feminine and masculine products by assigning form, ornamentation to femininity and function, performance to masculinity (Attfield, 1989; Ehrnberger et al., 2012; Sparke, 1995).

With the background and the literature, in my research, I adopted the feminist approach that is defined as bell hooks (1994) stated “transformative politics and practice,” in many dimensions, not just with my research aim, but also in the writing practice. How we conduct our research, how we present it, and whom we cite are part of this transformative practice. Citations are not just the scholars whom we read; they are the selection of writers who inspire us. Even though, like academia itself, it is not free of power dynamics. Sara Ahmed (2014) claimed citation practices are a site for the reproduction of gender hierarchies:

Citationality is another form of academic relationality. White men are reproduced as a citational relational. White men cite other white men: it is what they have always done; it is what they will do; what they teach each other to do when they teach each other. They cite; how bright he is (...)

Ahmed (2014) points out citationality to reveal the mechanism of acquisition and transfer of power in academia. Whom we cite, which theories we center our studies become who we empower, and is an essential part of feminist writing practices. This inclusion/exclusion process works with the citationality of the white men. Accordingly, I tried to meticulously evaluate my references to align my approach and theory with intersectional feminism through also the terminology that I used.

All the body of the literature briefly mentioned and presented above focuses on gender and design profession relationship, gender of the products, product

categories, and power relations performed through the design process. In specific to toy design, children's toy preferences by gender, inquiry on reinforcement of gender stereotypes through materialities, gender script analysis of game designs, and gender-inclusive design practice are studied in detail. This body of literature offers a framework on how design reproduces gendered hierarchies with materialities in many layers. What is not yet clear is reproduction and deconstruction mechanisms of gender within various design fields which hinge upon material practices. Toy design proposes a wide range of material practices that provides information from symbolic and visual hierarchies to structural and more intricate ones. In order to grasp deconstruction and reconstruction of gender through materialization within complex social and technical entanglements, I interviewed three designers and parents of the users/members of the communities that they are in contact with. In the next section, I will present the aim and the scope of the study with the main and sub-research questions.

1.2 Aim and the Scope of the Study

This study explores the materialization of gender in the toy design process by considering the multiple relationships in which designers are situated. I focus on designers for this research, keeping in mind and highlighting the mutual shaping of designers and other actors within the broader relationships in and of design. Therefore, I reconceptualized the design process as a meta-design process consisting of pre- on- and post-design processes to scrutinize pre assumptions on gendered materialities, gendered configurations of users, and understand reproduction and reconstruction of gender by user-designer relationships.

With this research, I aim to understand the production, reproduction, deconstruction, and reconstruction mechanisms of gender in the making of toys within different design practices. In accordance with this aim, first, I explain gender as a concept, and a structure is incorporated in the meta-design process by designers and materialization. Secondly, I scrutinize translating gender relation to toys by

reproduction and deconstruction based on specific material practice(s). Lastly, I aim to grasp co-construction of user-designer-community relationships and, gender reproduction, deconstruction, and reconstruction mechanisms.

1.3 Research Questions

To meet the research aim above with this research, I pursue one main question and three questions related to the first one below.

Main Research Question:

- How and in which ways is the gender produced, reproduced, deconstructed, and reconstructed through the design process in different areas of toy design?

Sub-questions:

- In which ways is gender incorporated into pre- on- and post- toy design processes by both designers and materialization?
- How does design as a combination of different social and material practice(s) translate gender relations into toys?
- How do community relationships between designers and users affect reproduction, deconstruction, and reconstruction of gendered materialities?

1.4 Structure of the Thesis

I present my research in five chapters. This chapter briefly introduces the research by first illustrating the background of the study, followed by the aim and scope of the study. After I provide the main research question with the sub-questions, I outline the structure of the thesis in this part before I move into the literature review.

Chapter two presents the literature review of the related studies. It begins by laying out the theoretical dimensions of the research and gives a brief overview of the recent history of feminist literature and conceptualizations of gender. Lastly, I present

discussions on material participation and co-construction of the publics and materialities followed by the gap in the literature and relevance of the study.

Chapter three is concerned with the methodology adopted in this study. It includes my research approach, its relevance to my research topic, detailed explanations on the sampling of the participants, the conduct of the interviews, and the analysis process of the collected data.

Chapter four presents comprehensive discussions of data collected through interviews and online channels with the key literature that I presented in the literature review chapter. The analysis introduces broader relationships based on design fields, then focuses on three main themes: binary conceptualization(s) in /of design practice, reproduction of gender in meta-design process and, deconstruction of gendered materialities through the design process and community relationships.

Lastly, in the final chapter, I present the major conclusions of the study with respect to research questions, discussions on analysis, and related literature in previous sections. Finally, I draw out the limitations of my research and possible implications for future studies.

CHAPTER 2

LITERATURE REVIEW

This chapter presents the key literature on gender theories and reviews approaches of gender in design. Building on approaches from gender as a social construction to gender as performance, I review ideas influenced by science and technology studies (STS) that conceptualize gender with special attention to mutual relationships among various actors. So, in this chapter, first, I start with a brief history of feminist gender theories. Then, I discuss reflections of gender studies in the design field and continue elaborating on the role of different actors involved in the design processes by reviewing ideas on feminist STS and material participation, which provides me a perspective into designers' relationships with communities.

2.1 Gender, Sex, and Sexuality: A Theoretical Framework

Scholars from different areas such as psychology, sociology, and politics have explored aspects of gender from within their particular disciplinary interests. Feminist activists, theorists, and scholars found various ways to illustrate how society is shaped by gender norms and provided means to understand gender-based inequalities. Even if the genealogy of the word gender contains an anti-feminist history¹ within itself, feminist theorists deployed the term to shed light on the social inequalities. In time, the way we use the term gender has enhanced as 'gendering',

¹ Repo (2015) argues that the term gender derives from sexology and psychology studies' invasive and violent research on intersex and transgender people, deployed to naturalize binary sex, and have been biopolitical apparatus since then.

‘doing gender’ or ‘gender performance’ and, gender’s relationship with sex also has evolved with new diverse theoretical perspectives. In this part, I give a brief overview of the recent history of gender theories from constructivist to poststructuralist perspectives.

2.1.1 Gender as a Social Construction

Feminist theories built on the term gender; with this term, feminist scholars and activists aimed to reveal hierarchical structures in our lives in both private and public spheres. The term ‘gender’ in a mean in the way we understand today has been used in order to emphasize social construction. Even if the way we used the term varied through time and place, we can say that the distinction between sex and gender, in other words, ‘sex/gender binary,’ as this nuance makes, is the building block of feminist gender theories. However, the roots of the sex/gender binary tell a different story. Repo (2015) argues the anti-feminist deployments of the term gender in the past and today by starting from its genealogy. She puts the relationship between deployment of gender and *scientific confirmation* of binary sex as follows:

Gender was deployed into the sexual order through a highly psychologized and medicalized field of knowledge production centered on gaining access to human life by controlling the behavioral system that upheld the sexual order. It produced individuals who possessed not only a sex but also learned a gender, expanding and multiplying the access points of power to the body, rendering it more elastic and malleable and hence, more governable.

Repo (2015, p. 24) remarks “upholding sex” to describe the reduction of sex to binary physiological characteristics, and “learning gender” refers to social and medical reinforcements of binary characteristics to people who are outside of this system. Nevertheless, gender has evolved from “psychological sex” to a concept that underlines patriarchal inequalities in that historical context (Repo, 2015). The basis

of the sex/gender binary can be traced back to Beauvoir's (1949/2010) famous book 'The Second Sex.' Earlier theories conceptualized sex and gender as opposites such as male/female, man/woman, masculine/feminine, and focus on the difference between two, which is illustrated as *natural*. This approach, which is later considered essentialist, is challenged by a social constructivist point of view. Nevertheless, in her book, Beauvoir renders not only the social hierarchy between sex categories men and women but also reveals values and meanings that are inscribed to these categories. With the famous quote "one is not born, but rather becomes, a woman," Beauvoir differentiates gender from sex and emphasizes the concept of gender as a socially constructed phenomenon (de Beauvoir, 1949/2010, p. 295). "Becoming a woman" highlights the artificial correlation between 'feminine' and 'female.' While female is defined as a sex category used to refer to sex assigned at birth, *feminine* is defined as a gender category that indicates characteristics that are assigned to women by society; sex used to be recognized as a physiological term, while gender is considered a cultural term. Therefore, "becoming a woman" or 'becoming gendered' is acknowledged as the adoption of feminine characteristics or gender roles as a process (D. Richardson, 2015 p.9)

Following a similar understanding, gender socialization theories explore the key mechanisms within the social construction of gender as well as the process itself. Oakley (1972) argues that we learn our gender roles, which are based on our sex assigned at birth² through social interaction. According to her, these roles linked to *gendered characteristics* are imposed by institutions like family and school; and obtained through observation, imitation, and modeling (Oakley, 1972). While Oakley (1972) primarily emphasizes the role of family, various scholars also stress the role of school in building gender roles. Hence gender socialization theories conceptualize gender as a code of behaviors enforced by society and its agents of

² Oakley (1972) originally used the term sex, but I translated it into sex assigned at birth in order to adapt it into up-to-date terminology.

socialization such as school and family. Even if conceptualizing gender in this way explains the effect of power structures that intervene in gender, it falls short of analyzing the complexity of gender roles so, it overlooks the individual choices and agency (Holmes, 2007). Moreover, Oakley (1972) argues that gender is socially constructed upon sex assigned at birth which she claims is *fixed*. Reading and theorizing gender as a social construct assist in a thorough understanding of the complex and interwoven interaction of power (patriarchy) and gender, while essentialism constitutes a narrow and normative understanding of it. Therefore, even though the social constructivist perspective challenged the earlier theories by criticizing them being 'essentialist' because of their views on innate feminine and masculine characteristics, as Oakley herself later admitted, this framework is also considered as essentialist by taking sex as a *natural, fixed*, and binary category. This does not only disregard the plurality of gender that changes over time, place, and context but also overlooks the other power structures that intersect with gender.

2.1.2 Gender as Social Division(s)

Feminist gender theories have been built upon the idea of society's intervention to sex and gender. Gender socialization theories define the source of such interventions as the institutions within the society, but this claim can be regarded as reductive due to its mechanical way of depicting the adoption of gender roles, which involves complex processes. Beyond the social constructivist perspective, gender also can be conceptualized as 'social division' to explain its involvement with cultural, social, economic inequalities (Abbott, 2006). This assists us in seeing simultaneous structures of oppression that are both a source and an outcome of gender-based expectations.

Feminist theories of gender focus on how gender determines people's values and social status (Connell, 2002). Expectations based on gender roles affect these sets of values, which creates asymmetry and hierarchy embedded in social, economic, and cultural dimensions. While radical feminism originates this hierarchy as systematic

male domination -patriarchy-; according to materialist feminists, the source of this subordination is economic class relations (Hines, 2020). On both sides, unpaid and historically designated domestic labor is emphasized, but materialist feminists consider womanhood as a 'class' in society. This class division engenders economic and social subordination, as well as the patriarchal hierarchies, generating both the class division and socially constructed gender (Wittig, 1992). The roles that are pre-assigned to people based on their gender and hierarchical value between those feminine and masculine characteristics lead to social subordination. Materialist feminist scholars (Delphy, 1984; Wittig, 1992) point out the involvement of gender with social and economic inequalities yet reject the universality of gender and embrace its dependence on time and culture, contrary to radical feminists who are criticized for disregarding intersections of race and class inequalities. In order to understand the complexity of gender inequalities, gender itself can be considered a subject of a social division that intersects with other social divisions such as race, ethnicity, nationality, class, ability, age, sexual orientation, and sexual identity, and gender identities beyond binary dichotomy.

In this framework, gender is not only defined as social divisions but also multiple concepts that depend on culture and time (Kimmel, 2001). At this point, it is essential to emphasize how the values attached to the gendered characteristics in cultures foster gender hierarchies and social subordination. Historically, while men and masculine characteristics are associated with *normal* and *superior*, women and female characteristics are regarded as 'other' and *inferior* (Harding, 1986). (Wilshire, 1989, pp. 95-96) frames dualistic conceptualization of the asymmetrical relationship between femininity and masculinity based on Western mythologies that shape cultural codes such as wisdom/ignorance; higher (up)/lower (down); good/bad; mind/body; reason/ emotion and feelings; objective/; hard/soft; independent/dependent, and male/female. However, beyond dualisms, there are multiple femininities, and masculinities appear in different times and places. Connell (1987) claims that power structures establish upon a hegemonic type of masculinity that dominates the other masculinities and femininities. Hegemonic masculinity is

positioned as the *normal* and *superior* of a particular situation regardless of its perfect fit to the stereotypes. Yet, this portrayal still reflects; western existence as a white, middle-class, cisgender, heterosexual man (Morgan, 1992; Oldenziel, 1999), and other forms of femininities and masculinities overlap with race, ethnicity, nationality, class, ability, age, sexual orientation and sexual identity besides the values associated with gender. Intersectional feminism³ rejects the universality of gender inequalities and questions how specific types of social divisions emerge when gender intersects with other categories (Hines, 2020).

2.1.3 Gender as Performance

Conceptualizing gender as social divisions evinces the intertwined power structures with permeated cultural codes and conduce us to apprehend the multiplicity of gender comprehensively. Nonetheless, even though complex, multiple structures of gender are acknowledged, current poststructuralist, postmodern perspectives on gender go beyond and define gender as a fluid concept, something we ‘do’ or ‘perform. Poststructuralist/postmodern theories of gender rest on the social constructivist approach, yet the queer theory brings it. While this perspective classifies the sexual identities as social construct along with gender, by defining gender as something to be performed, agency and individual choices are stressed (Holmes, 2007).

Even if ‘performing gender’ is overidentified with Butler and her groundbreaking book, which is later considered as a milestone of the queer theory ‘Gender Trouble’ (1990), it origins to a dramaturgical approach to gender (Holmes, 2007, p. 51). In

³ Intersectionality is a term coined by Kimberlee Crenshaw based on critiques of radical feminism by Black feminists like bell hooks and Patricia Hill Collins. According to hooks (1981), radical feminism portrays white middle-class women’s struggle as universal and disregards the unique gender experiences of racialized black women. However, today the term is not exclusively used for intersections of race and gender but also other categories like sexual identity, sexual orientation, class, age, ability, and other social division categories.

this approach, 'doing gender' is a behavior that individuals practice that reflects one's femininity or masculinity. While Goffman (1979) refers to such behaviors as 'gender displays' and correlates them with gender role expectations, (West & Zimmerman (1987) argue that every person builds their social relationships upon gender role expectations by 'doing gender' in order to justify their *sex category*. Both approaches take sex assigned at birth as a base of feminine or masculine behavior, similar to the social constructivist approach. On the other hand, 'performing gender' emphasizes the repetitive acts and 'performativity' collection of these acts to normalize or naturalize the idea of gender. (Butler, 1990) describes gender as a performative act in order to gender itself is not fixed or stable; it needs to be performed, yet these repetitive performances create the illusion of fixed and stable gender notion similar to heterosexuality. Butler (1990, p. 178) also points out cultural sedimentation for this naturalization process:

Consider that sedimentation of gender norms produces the peculiar phenomenon of a "natural sex" or a "real woman" or any number of prevalent and compelling social fictions and that this is sedimentation that over time has produced a set of corporeal styles which, in reified form, appear as the natural configuration of bodies into sexes existing in a binary relation to one another.

Butler (1990) argues gender norms culturally sediments on objects and materialities through time and create "real woman." While Butler here means normative understanding of being woman, the realness of it corresponds with the Connell (1987) hegemonic form of masculinity. *Acceptability* or *superiority* of the specific performance of gender also frames the *naturality* of binary *opposites*. Therefore, according to Butler, what is *natural* or not is culturally constructed, materially performed, and open for interpretation. This emphasis on fluidity also contains a

critique of heterosexist and essentialist bias in feminist works, which is one of the many facets of the queer theories⁴.

Binary logic constitutes a framework for the normative performance of gender, and it is central for poststructuralist feminism since linguistic analysis and deconstruction are deployed to figure out power relations and hierarchies. Wilshire's (1989) work on binary concepts based on myths enhances the postmodern world and reoccurs in cultural materials. Deconstruction is a concept coined by French philosopher Jaques Derrida in his book *Of Grammatology* (1967/1998), deployed to unveil the Western mode of thinking in texts and, as an analysis strategy widely adopted by not just feminist scholars but also the term found a place in populist discourse (Gannon & Davees, 2007). The deconstructive approach criticizes how binary oppositions are taken for granted, considered as the natural state. Deconstructive way of thinking relies on detecting these binaries that both derive from culturally coded norms and reproduce the norms themselves (Gannon & Davees, 2007). Just tracing these norms throughout text or content can seem to limit the researchers. Despite the deconstructive work strives for disrupting the *naturality* of these binaries rather than eliminating binaries entirely in order to render "constructedness of identity and meaning" (Sullivan, 2003). Accordingly, analysis of the visuals and connected texts are based on binaries that denote the designer's configuration of the user's identity to the artificiality of gender construction in the toy design process. The deconstructive approach is utilized as an analytical lens through thematic content analysis instead of a systematic method in the research. Unfixing binaries does not just grapple with oppression based on sexuality, sex, and gender but also aims to embrace the plurality of sex, sexual identity, and gender expression.

Especially transgender studies have brought material and social aspects of gender, sex, and sexuality by deconstructing sex/gender binary itself and exposing

⁴ Queer and feminist theories mutually comprise and feed each other but queer theory mainly differentiates sexuality from gender and more focuses on social relations of sexuality (Hines, 2020).

transmisogyny within feminism (Serano, 2013). By stating all of the above, the cores of the different theories of gender as a conceptual framework have been given in order to demonstrate the intertwined relationship between bodies, identities, and society discussed in the previous section. In the next section, I will analyze the ways these theories are connected to the material world via design.

2.2 User, Designer, and Feminist Science Technology Studies

The relationship between designer and user, their influences on each other, and various relationships that they build have been the subject of inquiry for scholars. Especially science and technology studies scrutinize this engagement regarding how this interaction is mediated by artifacts and creates socio-material entanglements that users, designers, products, and also gender relations co-articulate with each other. In this part, first, I present the body of work that investigates user and designer relationships and materialization of gender with the feminist STS perspective. Then, I move on to material participation and discuss a different form of user-designer engagement.

2.2.1 Feminist Perspectives on User and Design Relationships

Androcentric design culture in design evinces through discourses as well as the design process itself. Different agents in the design process such as users, designers, publics, tools, and methods are not immune to the effects of a complex web of power relations not confined to gender. Feminist scholars in science and technology studies have endeavored to analyze the web of social structures in relation to gender, the role of technological production in “becoming a woman” (de Beauvoir, 1949/2010), and how design is part of the social structures that reproduce these conventional becomings (Oakley, 1972). In this section, I will present the theories on the construction of the user through the design process and the designer’s role in this as a technological worker with the guidance of feminist STS.

2.2.1.1 Mutual Shaping of Technologies and Users from Feminist Perspective

Feminist STS scholars' adoption of gender theories' critique of private and public spheres pushed domestic technologies under scrutiny. Scholars claim production of household technologies is apparatus of oppression created by men/public/culture and control women/private/nature (Cockburn & First-Dilić, 1994; Cockburn & Ormrod, 1993; Cowan, 1983; Wajcman, 1991). While men are conceptualized as the mind that designs the artifact in the workforce belongs to the public sphere, women are bodies that use it in the home, domestic sphere. Instead of this asymmetric portrayal between women and men, the controlled and the controller, user, and designer, feminist STS scholars claim that gender and technologies mutually shape each other. This understanding actually chimes in with the domestication of technologies approach, which refers to the articulation of new technologies into every day through the social and cultural process (Hirsch & Silverstone, 2003; Lie & Sørensen, 1996). In the domestication approach, the user is recognized as an active agent in the production and reproduction of technologies by the process of symbolic, practical, and cognitive work (Lie & Sørensen, 1996; Sørensen, Aune, & Hatling, 2000). To exemplify, microwave ovens as a cutting-edge technology of the time, first target single men who do not want to or cannot cook, designed as a "brown appliance" then repurposed as "white good" due to its use of women in the domestic sphere (Cockburn and Ormrod, 1993). In this case, the use and non-use of microwave ovens mediated the design and redesign of the process from brown to white. However, even if this conceptualization of mutual shaping offers possibilities for the materialization of gender, this shaping's alignment to gender norms that limits women can still be considered a source of oppression.

Wajcman (1991 p. 83) argues that domestic appliances "industrialize the home and transform domestic labor." While this industrialization is supposed to save labor by making chores easier and faster, it increased labor with a new understanding of modern cleanliness and also the proliferation of domestic work that they are expected

to do daily (Cowan, 1984). This constrained women in the domestic sphere also created American white, middle-class housewives. At this point, it is important to denote that this body of work corresponds with Oakley's (1972) approach to gender socialization, how social structures like school, family this time maybe technological use and division constructs and reconstruct gender roles. Beyond that, the portrayal of women who are confined in the domestic sphere by men also correlates with bell hook's (1981) critique of the radical feminism that women's one-dimensional domestic reflection in feminist studies instead of many black counterparts who actively maintain their place in the workforce at that time. However, this does not erase the expectation of domestic work from women. In this part, I explained the mutual shaping approach on gender, users and technologies. In the next part, I discuss the literature on designers' role in assigning gender to users.

2.2.1.2 Gender Script Approach and Configured Users

Early research in STS studies illustrates the user as more a consumer of new emerging technologies than an active agent, while the designer is a sculptor of the user's behavior (Oudshoorn & Pinch, 2003). On the other hand, Actor-Network Theory focuses on an object's ability to mediate human to human and human to non-human relationships. Akrich (1992) uses the term script to define the relationship between artifacts and users. The script refers to assigned responsibilities to users and artifacts that derive from assumptions on user groups and usage of new technologies by designers and emphasizes artifacts as equal actors in the web of social structures (Akrich, 1992; Akrich & Latour, 1992). While the studies on the relationship between gender and design process have grown, the gender script approach is developed based on Akrich's (1992) concept of the script to understand gendered presumptions of users and their skills, habits, abilities accordingly materialization of gender in the design process (Rommès, 2014; Rommès et al., 1999, 2011; van Oost, 2003).

In order to acknowledge the gendered transformative and transgressive impact that appears throughout the design process itself and usage, feminist scholars also included the terms inscription and de-inscription on account of to emphasize projection of the designer's gendered assumptions on users and user's interpretation of the script (Berg & Lie, 1995; Oudshoorn et al., 2002; Oudshoorn & Pinch, 2003; Rommes, 2014; van Oost, 2003). Denz and Eggink's (2019) work, along with Canlı's (2017) thesis, aims to break scripts, deinscribe, and reconfigure gender stereotypes with queer methodologies and deconstructive approaches.

Researches on household technologies have exposed designers role in assigning a task to users by their gender over artifacts in the private sphere in which gender stereotypes on women repetitively reperformed with the usage of these technologies (Cockburn, 1997; Cockburn & First-Dilić, 1994; Cockburn & Ormrod, 1993; MacKenzie & Wajcman, 1999; Wajcman, 2009). On the other hand, the gender script approach recognizes that users have an agency to appropriate these new technologies with de-inscription, which enables the users' interpretations of products and representation of various forms of femininities and masculinities (Oudshoorn et al., 2002). Therefore, instead of a fixed one-way perspective from designer to user, designer, and products mutually shape each other as well as gendered codes in the society with repetitive acts, which refers to the performative nature of gender as in Butler's (1990) work. However, qualities that make the products gendered is not limited to the tasks that are assigned, users. Moreover, designers' relationship with the user is not limited to one-way task distribution In the next section, I discuss the different approach to the material-designer-user relationship by adding communities to equation.

2.2.2 Conceptualizing Material Participation

Designers' relationships with users and other actors who are involved in the design process constitute socio-material and sociotechnical entanglements that may either reproduce or deconstruct gender norms. Designers, due to their particular material

practices, connect, cooperate or build communities in order to reach their target users. Community-based design practices are praised for being more egalitarian and even transformative both for designers and users (Constanza-Chock, 2020). Especially, the inclusivity of the products both refers to concerns of exclusion of women users and the implication of participatory methods in the design process. Participatory methods are considered as feminist by many scholars because of their ability to projecting of others' experiences on design via symmetrical distribution of power between designer and user (Cassell, 1998; Greenbaum, 1991). However, community relations of designers stand for users' participation in the design process; it might not embrace participatory methods. Therefore, I draw on Marres' (2015) conceptualization of material participation since it captures a variety of relations between designers, communities and, materialities.

Marres, in her many works, underlines the materiality of participation itself, materialization of participation, and material-mediated participation yet meet at the formation of issues and in relation to that publics (Marres, 2005, 2012a, 2015; Marres & Lezaun, 2011). "Communities of the affected" and an issue together create the public, yet how they gathered defines the materiality of the participation (Marres; 2005; 2015, pp. 33-39). In this approach, designers' role here might be either to offer material solutions to the issue or to raise awareness with materialities and, in any case, the relationship between designers and communities mediated by materialities. Marres (2015) especially emphasizes the role of design in the current material-mediated world that "objects are to be deliberately equipped with moral and political capacities, such as "the capacity to engage" (p. 104). Socio-material entanglement that involves design and communities of the affected conforms with the goals of social design, which aims to create change with design work. However, regardless of designers' goals or issues of the public, these relationships are co-constructive by their nature since it is reminiscent of or even a micro-size version of designer user contact. Therefore, Marres' studies offer a theoretical background for my study to understand the material participation of the user in the design process, yet it does not inform designers' articulation to communities without issues with financial

concerns. In this part, I focused on user and designer relationships from different perspectives. The next section will cover the various perspectives on gendered products.

2.3 Design, Materialization of Gender and Hierarchies

Design, similar to many professional disciplines, is not exempt from gender hierarchies. Yet indeed, as a material practice, it is close to the center of the reproduction of gendered power relations. Social divisions, specifically gender, materialize through design, yet design fields themselves are divided by gender historically and professionally.

The definition and scope of design discipline and practice with its subfields constantly change, yet each of these re-calibrations is actually historically and locationally specific, reflecting the situationality of the design itself. Yet, design's tie to inclusion/exclusion regimes is pointed from a critical lens or can be observed in practice implicitly or explicitly in each of these redefinitions. Particularly in gender relations, Canlı (2018, p.1) frames design as "a set of material practices" that reifies and reinforces normative binary roles. Beyond the materialization of gender, design is built on and builds hierarchies in many layers that each of them requires its own in-depth analysis. Constanza-Chock (2020 p. 530) points out the reproduction matrix of domination which refers to their intersectional approach of power relations from/within the design and explains many dimensions of it:

"...design reproduces the matrix of domination through varied mechanisms, including the distribution of affordances and disaffordances that we encode into technologies (design values); who gets paid to do design work and who controls design processes (design practices); the stories that we choose to tell about design (design narratives); the inclusion and exclusion of various kinds of people from privileged design locations (design sites); and the methods we use to teach and learn about design (design pedagogies). "

They argue that design sustains systems of oppression in five layers. First is design values refers to Norman's (2013) concept of affordance but with a nuance of universal design principles; physical and also perceptual affordances and disaffordances which will lead, allow, or constrain users to complete tasks with objects (Constanza-Chock, 2020 p. 109). Yet, they indicate an extra dimension of disaffordance by giving an example of interfaces that force trans and non-binary people to misidentify themselves (p. 115). The second one, design practices, takes on a structural perspective and points out white, male, heterosexual, cisgender, able-bodied designers' domination in the design industry. Design narratives, the third one, include all the actors that contribute to the design process in the story without erasing (pp. 337-341). The fourth one conceptualizes design and its sub-categories mostly inclusive to privileged people that create their own systems, yet they point out grassroots community organizing for transformation and transgression (pp. 423-429). And the last one argues unlearning existing top-down practices of design, teaching, and learning bottom-up community-based approaches (pp. 470-503). Constanza-Chock (2020) organizes these five layers considering four main actors of design designer, products, users conventionally but also add communities. Their conceptualization of today's design as a site of the reproduction of oppression, including gender, has its own historical background.

Constanza-Chock (2020) argues that we should rethink designers as facilitators within communities rather than experts who rule the design process. However, in order to comprehend more complex relationships of materialization of gender in design, we should consider design as a technology-related work, involve a variety of actors from/within the design and, approach the design process from a broader perspective.

Cultural gender norms materialized through the design process by their form, function, availability to different user groups (Rommes, 2014), not just with physical affordances and disaffordances but also perceptual ones (Constanza-Chok, 2020).

In order to analyze the materialized form of gender, gendered products, feminist scholars have scrutinized the methods, processes, and material practices that create privilege/oppression regimes. In this section, first, I revisit the gender script approach by presenting a re-developed version of it that evaluates at which levels products become gendered. Then, I discuss the different forms of materialization of gender hierarchies.

2.3.1 Gender-Script Approach Revisited: Layers of Gender Divisions

As I explained in detail above, feminist scholars within the design field revised Akrich's concept of script as gender script to understand gendered preassumptions of designers and adapted many versions of it to emphasize different actors in the design process. One of these versions enhances gender script by centering the product itself in order to use it as an analytical tool, and I believe it captures intricate ways of the gendering of the products. This version of gender script integrates Sandra Harding's (1986) triadic approach to reveal implicit and explicit binary gender materializations that emerge at symbolic, structural, and identity level (Rommes, 2014; Rommes et al., 1999, 2011).

Like previous approaches, implementations of this one also vary through studies. However, commonly stereotypical representations in design, such as the use of colors, go down below symbolic dimension (Rommes, 2014; Rommes et al. 2011). Visual symbols such as colors, size, and form associated with femininity and masculinity can easily define a product as gendered (Kirkham, 1996). While product categories belong to the domestic realm (household technologies, childcare products) generally reflect the visual symbols of femininity such as pink or light color, soft forms, and smaller size; artifacts associated with the public realm carries masculine aesthetic values like dark colors, bigger size (Aaltojärvi, 2009; Ehrnberger et al., 2012; H. Kaygan et al., 2019). However, the gendering process of these products is not limited to their forms and also reflects on their functions. Identity dimension user's "skills and knowledge, physical attributes, and (...) learning

method[s]” deployed” is questioned (Rommes, 2014 p. 42). These skills and knowledge are not innate to gender, yet they are assigned to products by their functions. Rommes et al. (2011) use these three dimensions to analyze gender-specific toys and find out that themes involve competition aimed at boys while cooperation is assigned to girls. As for the structural dimension refers to products’ environment of use, whether it belongs to domestic or public spheres, or scrutinizes availability to specific user groups (Rommes, 2014; Rommes et al., 2011). These three dimensions crack the door to complex decision-making mechanisms of designers who intentionally and unintentionally contribute gender-based hierarchies. As Constanza-Chock (2020) notes, designers mostly have no intention reproduce the heteropatriarchy along with other oppressions, and naturally, “most of the time, [designers] do not think of themselves as sexist, racist, homophobic, xenophobic, Islamophobic, ableist, or settler-colonialist” yet they consciously and unconsciously make series of decisions that are one of the many bricks within the matrix of domination (pp. 118-120). Therefore, gendered cultural codes and values are other bricks that hold this structure together.

2.3.2 Pink, Neutral, Inclusive and More: Hierarchy by the Gendering of the Products

Materialization of gender in the design process is actually a byproduct of Wilshire’s (1989) western binary myths that I mentioned earlier. However, they expanded over time in the postmodern world with different materialization practices and corporate new skills, activities, characteristics, and materialities to the matrix. In these activities, like materialities, masculine ones are considered as more valuable than feminine ones (Harding, 1986). Similar to Attfield’s (1989) approach on design fields, Ehrnberger et al. conceptualize this asymmetrical relationship in the products with the hierarchy of function and hierarchy of décor (2012, pp. 90-91). While male-targeted products are evaluated by their superior capabilities among other products, feminine products are decorated and described as helpers by how much they make

life easier for the user also (Ehrnberger et al., 2012). This might stem from the portrayal of domestic technologies' as making-life-easier artifacts (Cowan, 1984) and also might be related to femininities' relationship with cooperation (Rommès et al., 2011). Similar to the Action Man and Barbie example that I mentioned in the Introduction chapter, the complexity and superiority of the masculine products reflect material hierarchy that reproduces gender norms (Attfield, 1996).

Since the new technologies of the time have aimed at men, most of the products have gone through the process that their masculine traits are softened, as well as they became more compact in contrast to the previous complex, repairable version (van Oost, 2003). This process is defined as feminization (H. Kaygan et al., 2019), feminine touch (van Oost, 2003), or 'for her' approach (Ehrnberger et al., 2012); yet in marketing studies, it is described as pink and shrink. This process not just illustrates the creation of functionally simpler versions of the technological products for women but also how middle-class, able-bodied, cisgender, heterosexual men are considered as the norm, ideal (Morgan, 1992; Oldenziel, 1999), a further materialization of their ideals as *normal*. However, if we come back to intentionality and unintentionality of gendering, approaches some designers adopted such as gender-neutral, design for all still ended up being gendered rather than neutral, due to their internalization of normal as white, middle-class, well educated, cis-gender, heterosexual men (Oudshoorn et al., 2004; Rommès, 2014).

Beyond the feminine and masculine products, power relations can occur in many ways. Instead of conceptualizing gender as two polars, considering it as one of many layers of identity can offer possibilities while analyzing a gendered object (Kirkham and Attfield, 1996, p.4). While some product groups are seen as exclusively masculine or feminine, some others contain multiple representations. H. Kaygan et al.'s (2019) study on pens reveals artifacts within a product category that includes a range of masculinities and femininities, including the hegemonic type of masculinity superior to others (Connell, 1987). Researchers argue that gendered executive power structures materialized through pens as prestige objects which can give power to their owner or reduce it (H. Kaygan et al., 2019). Even more interesting part shows

pen's femininities and masculinities relations with other materialities like more masculine and executive pens' similarity to cigars or clipless feminine pens due to lack of jacket or shirt pockets in women's clothes (H. Kaygan et al., 2019, pp. 91-92) This indicates how gender tied to the socio-technical and socio-material web of organizations.

2.4 Summary

In this chapter, I presented a body of work that informed my study in five parts. First, I set out the theoretical background of the study by giving a brief history of the term gender and feminist gender theories. I organized this section into three parts: Gender as a social construction, gender as social division(s), and gender as performance. The first part accounted for the social constructivist perspective and gender socialization theories without neglecting essentialist parts of the theory and the term gender's anti-feminist history. Then, I drew on feminist theories that render the hierarchical nature of gender division and their relations to values attributed to gendered characteristics that stem from western binary myths, which also inform postmodern society. I also introduced the notion of intersectionality that is first conceived by Black feminists but later widely used to illustrate specific social division(s) that occurs when gender overlaps with other identities such as race, ethnicity, class, sexual identity, sexual orientation, age, and ability. Along with the other parts discussed in the literature, dramaturgical approaches on gender were represented mostly based on Butler's (1990) ideas of the performativity of gender and naturalization of constructed sex through gender norms' sedimentation. Since these poststructuralist perspectives are also at the intersection of queer and transgender studies, I also briefly explained their critiques of each other within feminism(s).

Regarding various feminist gender theories presented, key theories on design discipline's relationship with the gender hierarchies were presented in the next section. I made use of Constanza-Chock's (2020) matrix of domination to

conceptualize echoes of this appropriation in today's design discipline, which grasps design's multi-dimensional relationship with gender-based oppressions.

In the next section, feminist scholars' take on the production of technology and its relation to theories within the STS literature were explained. In this field, earlier studies are based on the constructivist feminist approach. Scholars center men as the creator of the technology, oppressor and illustrate women users as oppressed by this new production, yet they do not disregard the mutual shaping of technologies, users, and gender norms (Cockburn & First-Dilić, 1994; Cockburn & Ormrod, 1993; Cowan, 1983; Wajcman, 1991). In fact, they conceptualized their own approach as mutual shaping, yet I believe their understanding of mutuality still relies on the structures and conventional gender expressions rather than the agency and plurality. Besides, their conceptualization of women stuck in the domestic sphere, which corresponds to their feminist peers' critique of the patriarchal system, correlates with censure of Black feminist counterparts, which is a lack of intersectionality. Therefore, in line with the more poststructuralist perspectives, design scholars within the feminist STS field revise Akrich's (1992) concept of script as gender script to underline designers' constructed preassumptions on users, yet they recognize users' the agency to interpret the products with understandings of de-inscriptions and re-inscriptions (Pinch & Oudshoorn, 2003). Among many adaptations of the gender script in which different actors are highlighted, one version offers a detailed analysis on binary gender relations from various aspects. Rommes et al. (2011) translate Harding's (1986) triad to analyze products' gender scripts in symbolic, identity, and structural dimensions. This analysis evinces intentional and unintentional genderings of products as well as the materialization of binaries in the design process. This part was followed by studies that scrutinize how hierarchies based on these binaries are built through materializations. Design scholars in this part mainly focuses on how power is executed through material binary products, product categories and hegemonic masculinities within the product groups.

The last section focused on Noortje Marres' conceptualization of material participation which will provide a theoretical basis for designer community

relationships in the analysis section. Material-mediated relationship between public and issues, materialities ability to carry, translate and disseminate a message and co-articulative nature of public and materiality relationship were presented in this part (Marres and Lezaun, 2011; Marres, 2005, 2012, 2015).

I presented the body of work that scrutinizes gender theories, power relations based on gender and design. Design scholars discuss gender and design relationships in many layers, such as gendering of design discipline and profession, gender of the products, and materialization of gender hierarchies in the design process. However, I believe gender studies always strive for more investigations to unveil different nuanced aspects of complex gender relations. Moreover, reproduction and deconstruction mechanisms of gender norms in different material practices within design have not been addressed yet. I think toy design is a proper area to fill this gap since it allows me to both comprehend surface gender relationships and dig deep into intricate ones in the changing gender and design scene. In order to understand entwined relationships, I identified three designers who belong to different sides of the toy industry ergo have different material practices. In the next chapter, I will present the methodology of this study with detailed information on the methods that I used and the sampling of these three designers.

CHAPTER 3

METHODOLOGY

In this chapter, I present the key methods and methodologies used in the data collection process. The chapter consists of four parts: research approach, data collection methods, data analysis, and challenges encountered. Since the methodology comprises the theory and practice of the research, in the first section, I explain the theoretical framework of methodology of this study, then discuss the implications of this on the research conduct. Within the data collection, first, I clarify the sample for both designers and parents of the users/community members whom I interview. I explain the method I developed to collect data in a way that enables me to unfold gender-related aspects of the design process. Then I explain how the data was analyzed, and in the last part, I address the challenges that I encountered in the research process.

3.1 Feminist Research Approach

Choosing appropriate research methodologies and in conjunction with methods is a critical factor for conducting any research. Even if, in the field, as incipient researchers, we usually start with identifying research methods, I believe it is crucial to apprehend methodological approaches and the nature of research. In this research, I mainly adopted the feminist methodology to analyze the relationships resulting in gendered toy designs. The feminist methodology enables me to unpack interlacing set of relationships and hierarchies in professional and social realms that design discipline does not exempt from. Furthermore, as the literature revealed, design might be an agent and arena for the reproduction of these hierarchies with material

practice (Attfield, 1989; Buckley, 1986; Ehrnberger et al., 2012; Gorman, 2001; H. Kaygan et al., 2019; P. Kaygan, 2014; Sparke, 1995).

Feminist research methodologies do not consist of a step-by-step prescribed formula; however, they depict a framework that criticizes androcentric (male-oriented) epistemological and ontological research perspectives (Leavy & Harris, 2019). They reflect the diversity, variety, and multiplicity of feminism(s) in theory. As Ramazanoğlu & Holland, (2002 p. 5) state, “for every generalization about feminism, it is possible to find feminists who do not fit, or who do not want to fit.” Feminist critique of research methodologies offers a multi-layered understanding that tackles the subject and aim of the research, asymmetrical researcher researched relationship, writing and citation practices, and outcome of the study (Hesse-Biber & Leavy, 2011). Researchers who employ feminist methods and methodologies adopt various strategies to conduct research, yet; their primary purpose revolves around generating transformative change in gendered hierarchy women and also in its intersection of trans and queer people through academic work, and in my case, this intent of change started with the aim of the research.

Feminist methodologies are emerged from the critique of objectivity of knowledge that is produced from within androcentric epistemologies; production mechanisms that prevented the participation of women in academic studies as a researcher and researched, and attempt to shape or portray women, their lives, and behaviors with the male gaze⁵ in research. (Ramazanoğlu & Holland, 2002).

In order to overcome this, some feminist researchers center the women’s and girl’s experiences which are called standpoint feminist research approach as well as they deployed participatory approach to diminish the hierarchy between the researcher and the researched by framing praxis of research as a way of solidarity (Leavy &

⁵ Male gaze is a term coined by Laura Mulvey (1998) in her famous essay *Visual Pleasure and Narrative Cinema*. Even if it is first used in feminist film theory to explain the archetypes of women who are portrayed from the heterosexual male perspective it is popularized and widely used in other areas to indicate androcentric perspective.

Harris, 2019; Ramazanoğlu & Holland, 2002). With the poststructuralist and postmodernist perspectives, the instability of the definition of women came into the discussion, and the researchers reprehended the reproduction mechanisms that take culturally constructed gender norms for granted (Gannon & Davees, 2007). Unfolding these various mechanisms that contribute to this norm-fitting system with the methods like deconstruction gained importance in feminist research. Feminist methodologies are the complement of approaches and methods with a political drive for change by whether centering women's experiences or revealing mechanisms that are involved in the constant reproduction of the norms, like design. Accordingly, the feminist perspective, respectively with the methodologies, helped me to unpack the gendering mechanisms in the design process.

Design as a professional arena is part of interconnected oppression regimes which are not confined to sexual identity and orientation but extended to class, race, ethnicity, ability, and religion. Toy design in particular, has been a scapegoat of the design practice in terms of gender inequalities with its highly gendered products and its polarizing effects on binary construction of gender. ' In this segregation, pinks and blues are at face value yet, the design process in its extended version produces materialities that cultivate gender hierarchies and power relations. Therefore, tracing gender norms in this metaprocess with a feminist perspective is essential to create a positive change in the design discipline. This tracing will lead to not just identifying and pointing the problem but naming it, which is considered as a part of the feminist transformation process. As Sara Ahmed (2017) raised, naming the problem is bringing it into being in a form that "otherwise would remain scattered" and allows it to "be spoken of and addressed by and with others" (p. 95). Naming triggers a discussion as well as might force a change by creating solidarity among the people using the same 'names' or terminology for the problem. Therefore, this study seeks to gather scattered pieces along with many studies that worked on design and gender and contribute to the body of work that I mentioned in the introduction and literature review chapters.

In this study, among many feminist methodological perspectives, I specifically adopted the poststructuralist feminist approach that enables me to conceptualize interconnected agents in this gendering process. Post-structural feminist philosophy rejects the objective fixed truths and focuses on situated knowledges⁶ and the reproduction of identities in everyday social life (Gannon & Davees, 2007). Likewise, questioning the objectivity of the user-designer relationship and the possibility of designers' interference of their identity through power relationships, experiences, and their situated knowledge in the design process was my starting point, initial curiosity in this research. In this vein, through the research, I aimed to apprehend the more complex relationship between different actors. Nevertheless, I adopted the feminist poststructuralist perspective to contemplate the design process' relation of gender norms via toy design.

With the philosophies behind it and strategies within, feminist research questions the nature of research wants to dismantle the gendered hierarchies and emphasizes the position of the researcher in many dimensions. It does not just draw a framework for the act of research but, at the end, generates a mindset of the questions every step of the way, which I believe researchers choose to highlight with their concerns. In the next section, I move on to the practice of the research and explain my data collection method to present my research design.

3.2 Data Collection Methods

The primary data that forms this research derives from semi-structured interviews with toy designers and community members/parents. Semi-structured interviews are widely adopted by the researchers who deploy the qualitative approach to obtain data about participants' in-depth knowledge and especially past experiences that

⁶ Haraway (1988) argues that knowledge is always historically and geographically specific, tied to the person who produces that knowledge.

correspond with the questions which the researcher wants to answer. The design process involves negotiations between a variety of actors, including with designers themselves, generating and providing countless relationalities that gender is constructed, reconstructed, and deconstructed. With the semi-structured interviews, this research aims to illuminate not all but part of these relations by scrutinizing designers' generic design process, articulating their past projects, and inquiring how and why they affiliated with or form specific communities. Hence, I choose three different cases of toy design firms. I conducted seven interviews with three different designers who hold different positions in the toy industry, in addition to three parents who are members of communities that two of these designers engaged in.

3.2.1 Semi-structured Interviews

Through the research, I adopted a qualitative approach to gain insights and further understanding of the ways gender norms entwine in the toy design process. The qualitative approach is widely preferred in feminist research because of its ability to capture experiences in social and professional spheres, power relations, and deeper meanings in the participant's decision-making process (Leavy & Harris, 2019, p. 137). “Social and cultural contexts in which they[people] lived, the ways in which they[people] understood their worlds” is the central inquiry of the qualitative research (Merriam & Tisdell, 2016, p. 6). In the design process, designers interact with various actors in different contexts, then present their products and their firms in public areas in specific ways to communicate with users and other companies. Hence, in an attempt to comprehend the designer's relationship with these agents and their effect on design decisions, a qualitative approach is employed. Qualitative data can be gathered in numerous ways though I used semi-structured in-depth interviews as primary source yet, I also incorporated secondary sources to obtain in-depth knowledge of the design decision-making process and their interaction with the public, respectively. First, I determined three designers who belong to varied material practices within toy design. Then, I collected data from online sources to

understand designers' relationships with other actors and perspectives within the toy industry. Based on these data, I prepared interview guides and visual materials to discuss gender relations in the design process in detail. In addition, in order to understand the complex relationalities, I also conducted semi-structured in-depth interviews with parents of the users who are also members of communities that toy designers are in contact with. In the following part, first, I will elaborate on the sampling of the participants and conducting interviews under the semi-structured interviews section. Then I will explain the online data collection process.

3.2.1.1 Sampling of the Participants

This research aims to analyze how gendered norms intervene toy design with the complex relationships between actors. For sampling, researchers either choose to focus on the similarity or difference of the participants consistent with the requirements for the research (Hesse-Biber, 2010) and, the sampling group should provide rich data for the analysis in any case (Patton, 2015). So, I selected difference as a criterion to comprehend the perplexity of the process and gather information-rich data. Although all the designers I identified work in the same industrial sector of children toys, represent a spectrum in terms of their location in the production process and the categories of products they design propose an array of varied relations for different pre-, in-, and post-design processes in order to present a perspective.

One designer I interviewed owns a design consultancy firm that designs toys based on briefs from large-scale international toy companies, such as Hasbro and Mattel, as well as smaller local toy manufacturers. I address him as “design consultant” in the rest of the thesis. He designs a wide range of products such as collectibles, craft toys, board games, as well as the redesign of the old toys and games predominantly produced in plastic. Because his designs fall into the more commercial side of the spectrum, some products among his works are sold on girls' or boys' shelves in chain stores. I included him in the sampling group not just to follow a straightforward

discussion on gendered symbolism reflected on these products but also to understand the dynamics between a larger company and the designer of a smaller design consultancy firm on this process.

The second designer I interviewed is a founding partner of a toy company along with his wife that designs and produces wooden toys. I will address him as “wooden toy designer” from now on. His company sells its range of gendered and gender-neutral products from its website and through other sales channels. So, they have a hands-on approach to their relationships with the consumers, users, and distributors. He works with his wife, who is also a designer, and they appear as a family in the early stages of the company. They collaborated with a mom community during their early years. I was intrigued by the range of the relationships through which their designs are enacted.

The last designer I interviewed is the designer and founder of a social enterprise which is a toy brand that aims to create social change. The brand has only one product that belongs to the product category of constructive toys and is defined as a creative play kit with open-ended and multiple scenarios. She has products produced and sells them on its websites and to distributors under the brand. Their primary aim as a company is to deliver this product to disadvantaged kids through their collaboration with NGOs. They also build a community that is involved in play advocacy and organize meetings and events with pedagogues, educators, civil society organizations, and parents to raise awareness of children’s right to play. They have various agendas like equality in play, play in urban sites, sustainability in play, and interact with various agents yet distinct from other companies. Within this community, they highlight different issues and people related to their current agendas, such as ‘play advocate dads.’ Therefore, I incorporated her into the sample group to implicate wider community relationships and to comprehend the co-construction of designers and users when communities become involved.

This sample group presents varied actors among which designers are situated and act within and through, such as larger toys companies, users, distributors, NGOs, or

communities, the multiplicity of the designer's interactions with various agents, a variety of product types. In addition to this main sample group, I also interviewed the community members in order to comprehend the other side of these negotiations.

Through the online data collection, I found out that owners of the firms who also sell their products with their brands collaborate or build communities that might affect the product placement in the market and user construction in the in- or post-design process. The first one is the wooden toy designer's brand's relationship with the mom community formed in Istanbul, which organizes events with the local municipality. The second one is the dads of a community built by the social enterprise in order to advocate play rights for children. I am interested in the community relations of the designers in the first place because of the toy designer's choice of mom/dad binary as self-acclaimed gendered social titles and curiosity of a possible effect of these affiliations. Moreover, these relations constitute a more informal relationship between users and designers that might be part of the negotiation process. Therefore, I interviewed convenient members of two communities in order to obtain knowledge about the extended design process. Participants are chosen among community members who have purchased the products of the designers in order to obtain insights on both designers' relationship with the communities and parents' thoughts on the products. I was able to interview with the founder of the mom community and two members of the dads of the play advocate community.

Mom community that the wooden toy firm is collaborated with, predominantly consists of stay-home mothers who regularly gather for dinner/lunch events besides informative panels for mothers. They collaborate with different brands based on short and long-term sponsorships. The wooden toy firm sponsored them between 2016-2017 and presented their products at the events. With this collaboration, they employed direct contact with the users and parents, specifically mothers.

Table 3.1 Participants' Information

| Designer | Gender | Experience | Design Firm | Product Type | Community Relations |
|---------------------|--------|------------|-------------------------|------------------|---------------------|
| Design consultant | Man | 10 | Design Consultancy | Various | X |
| Wooden toy designer | Man | 6 | Producer/Seller | Wooden Toys | Moms of Community |
| Social designer | Woman | 3 | Social Entrepreneurship | Construction Toy | Dads of Community |

On the other hand, the social designer engages with 'play advocate dads.' She, with her entrepreneurship project, which aims to deliver her product to disadvantaged kids via NGOs in the beginning, has initiated a community that gathers different actors in the toy industry together in order to create an impact in the industry. They bring forward various issues such as gender inequality in play, play in turmoil areas, and the importance of creative play. One of the agendas they revived is gender equality of parenting in play, and in their blog and Instagram account, they address 'play advocate dads.' Members of these communities who have one-on-one relationships with designers are not just customers of their brands but also samples for their secondary users. So as to understand not just how designers configure users by their gender but also in what respect the user, even when they are in a secondary position, forge designers in the design process.

3.2.1.2 Conducting Interviews

During this phase, I conducted nine interviews with 6 participants. However, even phases of the research are presented in a linear layout on paper; as Merriam and Tisdell stated (2016), qualitative research is conducted in a more iterative way, and phases of the research can be done simultaneously. I started the data collection with

pilot studies which consisted of questions about the generic design process and methods used. Since this did not provide me with information-rich data, I decided to use their products as probes in the interviews in order to make them recall their past experiences about their design decisions, involvement of the different actors and capture the gender norms' involvement in these processes. While I was forming the probes, new data has emerged from gendered products and definitions of the products as well as the community relations. Therefore, information from these online platforms is included in the data. In addition to that, I conducted an inquiry with the community members to find out whether their relations with the design firms are part of gendering mechanisms in design or not. Both data not just expanded the research but also enriched the data on different types of user-designer relationships.

The first interview guide (see Appendix A) consists of three parts. Background of the designer, including their experiences in former jobs, are examined with comparison to draw a frame for the design perspective of the participants that might be affected by gender norms in society. The next set of questions is about the design process in detail, user construction, in brief, form development, and the methods employed in this process due to trace designers' conscious and unconscious transpose of gender norms to products and users. In addition, the conceptualization of participatory methods' role on equalitarian even feminist designs (Rommès, 2014) is the subject of inquiry in accordance with research questions. The last part of the questions is formed to explore engagement between the involvement of life experiences and identity in building design perspective. Identity here includes gender but is not confined to it; being a parent, an activist, a businessperson, or an entrepreneur provides designers a range of information and experiences that they can deploy in the design process. However, because the questions in the first part led participants to give too generalized answers, they were not able to recall their memories of the design process. Hence, I restructured the interview questions.

The gendering of the toys is a sensitive widely discussed issue because of the vulnerability of the user group so, I adopted different strategies to go beyond the

possible filtered answers in the interviews. After the pilot studies, I determined a range of products through online data collection. I mainly focused on stories of the products and tried to set the narrative along with their social media posts to understand relationships with the other actors in the interview guides. I also prepared a visual guide beside the interview guide for the design consultant and the wooden toy designer in Miro to ask about stories of the products. In this way, they aimed to recall the past experiences that would enable them to reflect on the design decisions more (see Appendix B for the design consultant's interview guide, see Appendix C for the wooden toy designer's interview guide). Nevertheless, during the interviews, sometimes participants got defensive about their views on gender. Yet still, they also made valuable self-reflection on their design decisions, relationships with other actors, and the intersection of gender with these. Hence, gendered modifications of the products and gender relations are unfolded through conversations during the interviews.

Because there is just one product in the case of the social designer, in advance, I requested the workshop guides that they initially developed for their NGO partners, and similarly, design decisions and their applied reflections in workshops are analyzed. After discussing the products with the wooden toy designer and the social designer relationships, how and why they build or contact in with these communities are scrutinized (see Appendix C for the wooden toy designer, see Appendix D for the social designer). I also interviewed participants more than one time to obtain in-depth data, and it allowed me to listen to recordings, elaborate on them in the following interviews and understand participants more profoundly. Patton (2015) indicates that interviews enable researchers to 'enter into the other person's perspective' (p. 426).

On the other hand, two sets of questions are composed for community members (see Appendix E). The first set aims to grasp community members/parents' perspective toward toys and play, whether it corresponds to designers' views or not; then their thoughts about the firms' toys that they use with their children, and lastly, questions

on the nature of the relationship between designer, communities and community members are examined.

Since the toy industry relies on gender stereotypes, during the interviews, I used binary terms in order to keep the flow going and discussed the especially gendered designs based on the boy/girl binary. The binary conceptualization of gender that appears in the research reflects the social values attached to it and the visual strategies that designers use. Although in literature and analysis, I tried to use more inclusive and non-essentialist terminology, some parts of interviews with the parents/community members based on gender experiences of their children since embracing diversity with the use of sensitive terminology represent the core values of feminist work (Leavy & Harris, 2019). Because of that, I did not use any quote that assigns sex to specific children. Therefore, the way we present our research with the terms we use is part of feminist writing practice besides the including and excluding strategies.

I traveled to İstanbul for the first two interviews, although all the other interviews were conducted online via Zoom because of the global pandemic break. Instead of the comfort that is provided by face-to-face interviewing, online interviewing enabled me to share visuals with screen sharing and Miro and recording videos with Zoom. In some cases, online interviews might be even more advantageous. For example, one designer participant showed various toys that he designed and had kept in his home to the camera for comparison with toys I selected. Moreover, participants being in their home environment allowed them to feel more comfortable since most of the people are used to online meeting settings because of the global pandemic. Despite these advantages, we faced many connection problems and even electricity cuts that caused rescheduling two times.

With the designer participants, interviews lasted 50 mins to 180 mins and 20 mins to 100 mins with the parent/community member participants. While face-to-face interviews are only audio recorded yet, videos are also recorded on Zoom interviews with the consent of the participants in both cases. Before we started the interviews, I

read the consent form (see Appendix E) and took questions about research both before and after the interviews to comfort the participants. In order to enrich the data and deepen the conversation, I took notes during the interviews on the key points related to the research questions and asked them for elaboration on those points. Besides, right after every interview, I took some notes on intriguing points. This helped recall memories during analysis, especially for the face-to-face interviews, which I do not have the video records. Since there are very few toy designers in Turkey, I could not ensure designer participants' confidentiality and send them the quotations that I used in the research for a second confirmation, whereas I guaranteed confidentiality to other participants. Besides the interviews, I collected data online, which I also utilized as visual guides for the interviews, elucidating the post-design process.

3.2.2 Online Data Collection

Websites and social media platforms are public realms that both design firms build their identity to communicate and interact with the user in many layers. They showcase their products to meet their target users, which reflect their construction of users, interact with them one-on-one in many cases, build and strengthen their communities through online channels. Thus, I collected complementary data besides the interviews to explore the ways they configure and communicate with users in the design process as well as to examine community relations. Mainly, the websites of each design company and their most frequently used social media platform are included in the data. For their websites, I focused on the texts they use to define the products and the users who are depicted with the products. However, because of the different structures and characteristics of the firms, separate strategies for data collection are obtained in the process.

For the design consultant and the wooden toy designer, I selected products after the exploratory research on their websites. I obtain product lines or similarity of function in different product groups as a primary consideration for this selection in order to

facilitate comparison between the products and ask designers the source of this difference. For example, for the wooden toy firm, products are classified as walkers, dollhouses, and role-playing toys. On the other hand, the products of the design consultant belong to three different product lines. Besides, I also pay regard to stereotypical gender representations within and of product lines and categories

While the wooden toy company mainly and actively uses Instagram and Facebook to promote their products and contact with users, the design consultancy firm employs Facebook to share a series of photos with small text captions and video ads of its products but not frequently. I used photos of the products for the visual guide, and I benefited from the caption of the photos for the narrative of the interview guide. As I mentioned, I realized the wooden toy designer's community relationships on Instagram and also incorporated similar to the social enterprise.

Unlike other firms, the social enterprise has one modular product that can be used in different contexts. They use Instagram as the main social media platform to communicate with their target user as well as engage in advocacy through design. Pinned stories constitute the main body of the data since they use it as a showcase for their activism work and past events with the community. However, they use their blog as well as a blog to raise issues that they considered as an area for advocacy in play. Therefore, I also included blog posts in the data set to enhance the understanding of community, advocacy, and relations with other industry and community actors. All the data I gathered through online channels and interviews are transferred to the next step to look at the design process, the relationality of the various actors, and the effect of gender norms in this process with an analytic lens.

3.3 Data Analysis

Analyzing the data collected over interviews and online inquiry is the last step of the research. Data analysis consists of three main phases as verbatim transcription of the interview records, thematic analysis of the interviews, and content analysis of the

online data. First, I thematically analyzed the data that I collected mostly through Instagram to grasp gender symbolism in products, configuration, and representations of users and designers' community relationships. Both visuals and texts are included in this process because of their connection to the user configuration. Then, for the interviews, I adopted the reflexive thematic analysis method in which themes are reached through codes at the end (Braun & Clarke, 2006, 2021). So, instead of conceptualizing data with the pre-defined assumptions, I tried to analyze data independent of whether codes are related to the gender norms with the aim of reflecting complex relationships between the agents in the further stages.

3.3.1 Analysis of the Interviews

Reflexive thematic analysis is a method that emerged from psychology and is widely deployed in other research areas. Reflexivity in the term refers to and marks the 'researcher's subjectivity as an analytic resource', which emphasizes not just the frequency of codes but also researchers' priorities (Braun & Clarke, 2021). The reflexive thematic analysis consists of six phases as data familiarization, systematic data coding, generating initial themes from coded and collated data, developing and reviewing themes, refining, defining, and naming themes, and writing the report (Braun & Clarke, 2006). Even if the method itself offers a step-by-step guide to analysis, iterations throughout the transcriptions, coding, and theme development are required for the process. Similar to the many methods used in interviews, the analysis starts with transcribing interviews that are included in data familiarization.

3.3.1.1 Transcribing the Interviews and Data Familiarization

Through the research, I transcribed all the interviews manually without using any special software. Verbatim transcription is immensely suggested, especially for inexperienced researchers to get familiar with the data, even considered as a type of analysis although it is a time-consuming process (Clarke & Braun, 2019; Merriam

& Tisdell, 2016; Saldaña, 2009). Since we do not have prior knowledge of data more important than others, transcribing all the interviews is crucial for the further stages (Seidman, 2006). In addition to that, the observed emotions and gestures of interviewees are also noted in the transcribed texts in order to enhance the data. In this sense, I benefited from video recordings on Zoom and memos that I kept after the interviews. Analytic memos are considered as part of the data, along with verbatim transcriptions of the interviews enrich insights on data interpretation, especially in the coding and writing process (Hesse-Biber & Leavy, 2011; Saldaña, 2009). Memos are not just part of the interview process but are also included in coding to help the theme construction process to increase reflexivity in the process. Data familiarization through verbatim translation and keeping a memo is completed by repetitive reading of the data, which leads to the coding process

3.3.1.2 Coding and the Theme Development

With the familiarized data from the verbatim transcriptions, the next phase of the analysis is systematic data coding which leads to the generation of initial themes. A comprehensive understanding of interviews is required for the analysis of data and identifying codes through constant reflection generates certain groups that accumulate as themes (Braun & Clarke, 2021). Reflexive thematic analysis is a flexible approach that allows researchers to mix-match different methods for the systematic data analysis stage within the framework. Hence, in the beginning, I mainly employed descriptive and process coding for recognizing main patterns and concepts in the interviews. While both methods are based on defining passage of qualitative data with keywords or phrases, these definitions are often nouns for the former. For the latter, phrases are verbs since it is deployed to identify relations of activities (Saldaña, 2009). Because this research mainly explores the design process considering the materialization of gender, designers' perspectives comprise the main data of the research. Participants' values, their effects on the decision-making process, and interaction with other actors, especially with the connections of gender

norms, often manifests by comparisons between users and products. So, throughout the coding, I also use versus coding to understand the gender understanding of the participants and capture how they reflect them to products.

Qualitative data analysis software MAXQDA is employed in the coding with the methods mentioned above, continuous categorization and re-organization of the codes which benefits the theme development. I especially benefited from visual mapping tools to re-organize codes. Paraphrase tool with the memos also helped me build themes and the narrative of the research for the latter phases of the analysis. After intense data coding, initial themes are generated based on the categories. However, in order to diminish the confusion between topics, categories, and themes, I focused on 'how' the toy design process intervened by the norms and identities instead of defining the web of relationships in the design process in the first place. However, through the coding process, these relations and their influences on the materialization of gender unfolded. From the beginning, I benefited from theories that I presented in the literature review, and I even coded some parts with the terms from the literature that match with the data. Theoretical knowledge on especially gender theories on gender script (Oudshoorn et al., 2004; Rommes, 2014; Rommes et al., 2011; van Oost, 2003), material participation (Marres, 2005, 2012b, 2015; Marres & Lezaun, 2011) and categorized codes, are amalgamated in this process to achieve the "shared meaning" quality of the themes (Braun & Clarke, 2021). In the coding, categorization, and theme development, I did not just consider repetition and similarity of the codes but also included the difference between them to enclose the relationality of the meta-design process. Constructed initial themes are refined, thoroughly defined, and named with an interpretive approach instead of a definitive perspective to go beyond the knowledge on the surface and capture the process within the design process. At the end of the research, presented analyzed data with the theory and discussion is presented as a narrative outcome.

3.3.2 Content Analysis of the Online Data

As I mentioned above, I also collected data through websites and social media accounts of the designers. After the pilot interviews, I analyzed the social media posts also regarding theoretical knowledge. I drew on Rommes et al. (2011) gender script approach and tried to select products gendered in symbolic, structural, and identity levels to form a visual guide for the interviews.

After the interviews, I return the online data and compare the designers' comments on products and their discourses on social media posts. For the social designer, I mapped the issues that they adopted, events they organized and looked for their community relationships and how all these related to gender. On the other hand, for wooden toy designer, I went through the products that we discussed in the interviews and paid attention to user representations of these products.

3.4 Situating Self in the Research and Methodological Limitations of the Study

Feminist methodologies rely on the rethinking of objectivity by valuing self-reflexivity, personal experience, and power dynamics in the research ((Hesse-Biber & Leavy, 2007). Haraway (1988) argues that impartiality in the knowledge production process caricatured form of neutrality covers the bias of the researcher. Therefore, feminist researchers claim to acknowledge our privileges and biases in the research process draws our studies up to objectivity in practice.

My personal experience in Chapter 1 displays brief moments that I revisited and re-assembled as a feminist designer and researcher. As I mentioned above, I adopted an intersectional feminist perspective, which shaped my research from the research aim to the writing practice, yet as a cis-gender middle-class woman, my experience and reflections have limits itself, which may affect the study.

The main limitation in the study derives from the topic itself. Discussing gender relations with the designers especially works in a gendered area like toy design, created a self-defense barrier during the interviews. As I mentioned earlier in section 3.2.1.2, I tried to overcome this by asking narratives of the products with the visual interview guide. Also, first, I focused on how they define the user rather than bringing the gender to the table. I tried to wait for them to mention gender relations instead of asking them. These strategies helped me to soften the barrier in the first interviews.

Hesse-Biber and Leavy (2007, p. 131) argue that knowledge production is highly influenced by “situational dynamics that exist between researcher and researched.” In the asymmetrical dynamics, the researcher holds a superior position as an expert, whereas the researcher is positioned as a knowledge provider. However, during the interviews, I realized that multiple power dynamics emerge, and it changes momentarily. My position as a feminist researcher and the topic of the study as a feminist researcher promoted to build of the barrier since I explained the topic beforehand. But, since I work in academia, my closeness to the theoretical side of the profession reversed the hierarchy. Participants pointed out the difference between the theory and practice multiple times during the interviews. Therefore, changing power dynamics during the interviews affected the data and self-reflection of the participants.

3.5 Summary

In this chapter, I presented the methodology of this study, including my research approach, sampling, methods I used for data collection, and analysis of the collected data. I adopted the feminist methodological approach. Since this research investigates the materialization of gender in the design process, my methodological approach relates to the topic, aim, and objectives of my research. The first stage of the research was the sampling of the participants. I determined three designers who work in different arenas in toy design to understand their relationships with different

actors and gender materialization processes. My primary data derives from semi-structured interviews with these three designers. Yet, after the two pilot interviews, I changed my approach and applied different strategies for each designer that related to their practices.

For the social designer, I prepared a set of questions about the brand's community relations, events that they organized and also their design process. For the design consultant, I reviewed his products from the online sources, chose to discuss based on gender script, and focused on the products' stories. Similarly, for the wooden toy designer, I focused on product stories and community relations. In order to unfold complex relationships from within design, I integrated products into interviews with visual tools. This allowed participants to recall their memories and design decisions, and it allowed me to discuss their product stories related to gender in a more detailed way. I also interviewed three community members/parents of the users to understand their designers' relationships with these communities. As another secondary source, I collected data from designers' brands' social media accounts and websites to understand their community relationships and user representations of products discussed.

I analyzed the data gathered from online sources by focusing user representations on posts and their captions then, I articulated them to interview data. I transcribed the interview data verbatim. This afforded me to familiarize myself with data and provided a basis for the coding phase. I adopted a thematic analysis approach for both interviews and the online data. For the coding, I drew on relevant literature but did not limit myself to it. After the coding process, I created themes based on codes and determined the quotations that I used in the analysis section. In the next chapter, I will present the analysis of gender relations in the design process.

CHAPTER 4

ANALYSIS OF GENDER RELATIONS IN THE DESIGN PROCESS

This analysis chapter presents the data collected and discusses it through the related literature. The analysis is organized into four sections. The first section presents the broader relationships in which designers are situated. This prelude provides insights on three designers' different backgrounds, concerns, engagements, overall internal and external dynamics, which provide a basis for the explanations in the following sections. The second section unfolds the binaries in detail by examining designers' conceptualization of gender dualisms, sedimented binaries in designed objects, and the idea of 'crossing binaries' to explain the materialization of gender. The third section scrutinizes reproduction mechanisms of gendered materialities in the meta-design process based on designers' journeys with their companies. The fourth section focuses on how designers deconstruct and reconstruct gender norms as well as gendered materialities in pre- on- and post-design processes. The concluding section brings these conceptualizations together, shows their relationships within this complex interconnectedness, and elaborates on possibilities for future studies.

4.1 Broader Relationships in Design

Designers are intertwined in relationships with various actors, such as users, consumers, products, clients, communities, as well as design culture(s), discourses, and their experiences, and all these entanglements co-construct each other in pre-, on- and post-design process. Gender norms, similarly, manifest in these relations and are constantly produced, reproduced, deconstructed, or reconstructed both through and by these interactions.

The designers I interviewed belong to different areas of toy design that have diverse practices and limitations that are specific to each area. From communities and users to clients, production to packaging, their concerns contour their enactments. For example, since the wooden toy designer engaged in the design, production, and sales, he denotes relations that conjoin through his design process as follows:

[1] We have to look at it from many different angles. We have to look at the production; you have to look at the packaging; you have to look at the number of pieces used. All of these are like filters; think of them layer by layer, think like sieves.

The metaphor of ‘sieves’ above renders both the internal factors based on their specific production practices and the external factors that influence design materializations. During my interviews, the wooden toy designer highlighted the durability and healthiness of their product related to the wood material while mentioning product safety tests, regulations. The wooden toy design company adopts this as the main discourse and underpins it with different elements such as the public image in social media or certificates. For example, they present the Blue Angel Certificate⁷ as a complementary element to their message of naturality. Therefore they include sieves like certificates that correspond to their message. This message stems from the material culture wooden toys are fostered compared to other toys. While the wooden toy designer captures the parents by health and naturality, sieves of the design consultant are mostly based on mass culture materialities because of his dependence on clients who are on the commercial side of the toy industry. He explains his sieves below as:

⁷ Blue Angel Certificate is an ecolabel which focuses on health and environmental impact of the products. The wooden toy brand displays the certificate to point out use of the non-toxic paint. For the further information on Blue Angel: <https://www.blauer-engel.de/en>

[2] The audience you are trying to reach has a material choice, a universe you know... (...) Let say you are designing a product for a boy, a teenage boy, or a teenage girl. What is popular now, from shoes to accessories, from a mobile phone brand to glasses? What's in their universe? What TV programs do they watch? You have to look at all of them, what inspired them. You also extract a product from an amalgam of these.

Because he works with clients who mostly depend on trends, the user is defined with current material choices, which might sometimes be based on stereotypically gendered personas (Rommès, 2014; Turner & Turner, 2011). His indirect relationship with the marketing, sales and buyers shapes the design perspective as well as design decisions.

In comparison with the design consultant, the social designer is also in contact with various actors. The social enterprise collaborates with NGOs, museums, larger companies as well as producers, consultants as a toy brand. Similar to the wooden toy designer, in line with their message of equality, the band went into the B-corp certification program⁸, via the social incubation center, which evaluates the social and environmental impact of the companies as a whole. Since they form their own community, 'Play Advocates,' from the beginning while managing a toy brand, they play different roles based on the actors they engage. So, sometimes they are ushered in a way that does not correspond to their messages of equality.

[3] In the toy industry, usually [theme packs like Lego's] [are relevant to] gender discrimination, age discrimination, pink or blue, or what else.

⁸ B-corp certification program evaluates the company from conditions of the workers to carbon footprint of the supply chain actions. For further information please see: <https://bcorporation.net/certification>

Consultants from abroad were told that as well. They were like, " build a pony with this set, a racing car with the other one or something.

Since the toy industry is highly gendered, expectations of parents, users, and other actors intervene in the design decisions on the way of pre- on- and post-design process like in the example of theme packages but, designers' existing engagements, in this case, like the social incubation centers, NGOs, provide a perspective that becomes a sieve for designers. Therefore, all these dynamic, complex relationships and interactions draw up sieving in which designers produce, reproduce, deconstruct and reconstruct gendered materialities. In the following part, I discuss how the binary conceptualization of gender operates as a sieving mechanism in material reproduction.

4.2 Between Binaries: Dualistic Materialization in/of Design

In this part, I will address binaries, beyond pinks and blues, girls and boys, which underlying gendered materialization of toys and games. Binary logic, with its roots in Western enlightenment, can be considered as a mode of thinking and shapes not just bodies but also practices which design part of (Canlı, 2018; Rommes et al., 2011) draw on 'gender script' as an analytic tool specifically to understand the gendering mechanisms for games and toys in three dimensions; the symbolic dimension, which refers to the visual reflection of femininity and masculinity; the structural dimension, which examines the usage scenario by location (public/private) and identity dimension which classifies toys and games based on their requirements or indication of conventional femininity and masculinity-related traits or activities. Designers employ gender-script consciously and unconsciously while materializing binaries in the design process. In this part, first, I will propose the concept of binary clusters to illustrate the materialization of gender norms in the design process, followed by sedimented binaries in which materialities' relationships with the dyadic approach

will be explained. Lastly, in the third section, I will elucidate on how designers use these binaries by crossing them.

4.2.1 Conceptualizing Dualism in Design: Binary Clusters

In this part, I will explain products are materialized gendered in many layers through the design process. Designers, by the nature of the profession, mediate between many actors, construct products according to their forms, users, usage scenarios in which all comprise gender script (Oudshoorn et al., 2004; Rommes et al., 1999, 2011; van Oost, 2003). While the color for the toys is the most visible and well-known gender script in symbolic dimension, forms are also associated with gender as slender/chunky (H. Kaygan et al., 2019), rounded/angular, and clean/complex shapes (Aaltojärvi, 2009; Ehrnberger et al., 2012). Similarly, the design consultant mentions certain characteristics of forms that are connected to gendered materialities points out:

[4] (...) in general, more rounded products, more bubbly products, more curvy products, fluid forms are generally more preferred in children's toys. At least, forms with such sharp chamfered electronic connotations, tools, or gadgety forms are most likely to be sought by higher age groups or boys groups.

As the account illustrates, curviness and fluidity of the product are defining aspects of the kids' toys which are also evoked with the girls' toys. On the other hand, angular and chamfered edges are associated with boys and higher ages. In this process, the design consultant reproduces gender stereotypes by solidifying and working further on soft/hard, fluid/angular dichotomies. Also, he contributes to the hierarchies of feminine masculine by associating kids' products, childishness with the feminine. Similarly, Ehrnberger et al. (2012) argue that childishness, alongside the uncomplexity, are characteristics of feminine or women targeted products while

men's products are associated with complexity, 'exclusivity' and 'intelligence' (p. 89). It is consistent with how the participant defines femininity by pointing out only the 'form,' yet he brought the task, function, and even a technology-related product genre, 'electronics,' into the equation (Aaltojärvi, 2009; Berg & Lie, 1995; Cockburn, 1997). This just not simply reflects the designers' configuration of user visually in symbolic dimension but also unintentionally connects it to identity and structural dimension. Gender-based binary division practices are not only related to design, but also practices' association with gender becomes ingrained by repetition in many areas of daily life. One participant from the Play Advocate Dads explains the difference in play habits between him and the mother:

[5] (...) we, as two different individuals, have two different talent scales, different interests. Well, in general, this area also changes [the games we play with our child]. I mean, while I can do less kitchen stuff, about things related to repairs, we sit down and disassemble, break things together, same applies [to my wife].

He frames the difference based on skills and interests, yet the areas he indicated bounds up with gendered division of work. Even so, in this equation, designers serve as a bridge in the process of materialization of these interests and skills. Similarly, the quotation below reflects how forms, functions, usage scenarios, and locations are related to one another by the binary conceptualization of gender.

[6] More feminine roles are preferred [for] more nurturing, (...) more food-themed things. For example, we designed a cookie-cutter (...). It has very pink colors, fluid bubbly forms as a form.

He clearly connects a behavior, character trait to an act, practice, and then links all of them to the form of the product. In my interviews, the design consultant sometimes

uses the phrase ‘keywords that go hand in hand’ to define how he configures these connections. Normative roles characterized above that are assigned to femininity or masculinity are determined through these adjacent keywords and constitute binary clusters that reproduce gender norms.

[7] This is like there are some keywords. After all, our job, an important part of it, is like to be able to express a feeling, with form. Well, you do it by abstracting.

The design consultant defines the practice of design as the act of interpreting keywords into forms by abstraction in which materializes gendered keywords. In order to reflect the process of iterative usage of keywords and how they are collected in binary clusters then products, I will use Butler’s (Butler, 1990;2011) concept of sedimented norms. Butler (1990) argues that the illusion of naturality of sex and gender relies on the ‘cultural sedimentation in the objects’ (p. 139). The perception of the naturality of these sedimented norms resonates with the designers’ story to transform abstract binaries into products.

[8] Let me say, only forms that do not go in the wrong directions, forms that do not make false connotations (...) Let me tell you, there are certain keywords, masculine, feminine, fast, slow. What determines these? Our universe determines it! We all know the speed; we all know the form that evokes the slow.

Above, the design consultant also emphasizes the universality of the knowledge on binary gender conceptualization and its reflections on design. These forms that everybody knows are pertinent to keywords are in tune with. Butler’s (1990) idea of sedimented norms, the collective knowledge mutually shapes gender and their connected keywords. Dyadic understanding of products and their related keywords

based on the difference between feminine and masculine jobs, works, forms, and functions, fosters sedimentation by material repetition in every design process. These binaries clustered around materiality also define the *nature of the product*. Even if the *nature of the product* is a vague definition, I believe it captures the multidimensionality of deployment of binaries, and temporary results of the interaction also resonate with the taken-for-granted structure of the gender roles.

4.2.2 Gendered by ‘Nature’: Temporary Fixations in Binary Clusters

In the previous part, I drew a generic frame of dualities in the design process and how they form binary clusters which contain adjacent keywords. Binary clusters are naturalized by material repetitions; concepts, keywords, skills, behaviors, characteristics, and materialities are not fixed in these clusters, yet some products’ mobilities are different from others because of sedimented norms that they collected through time. I mentioned the nature of the products to indicate specific product types’ strong relationship with binary clusters they belong to. In this part, I will elaborate on these products. Ehrnberger et al. (2012) suggest that product categories are gendered as per their function, use of place, and even their names. Correspondingly, interviews showed that regardless of their script in symbolic dimension, some products are almost embedded because of the constant cultural and material sedimentations.

The first example is a child-size stroller co-designed by wooden toy designer. The case of the stroller corresponds with studies of Ehrnberger et al. (2012) and Rommes et al. (2011) because it correlates with motherhood and care. The wooden toy designer defines the user group of the stroller:

[9] [target user of the stroller] Children who have just started to walk, who can direct, control the product, who will be more of a companion rather than a walking aid, who will take the mother as a role model. (...) Here, of course,

(...) how many boys bought [this product], very little. It is a toy mostly preferred by girls... I haven't seen it used by a boy yet.

While he is trying to avoid gender connotations of the product because it is not gendered in symbolic dimension, he defines the users as 'children who will model the mother.' The products' characteristic here is based on taking for granted the role of motherhood, its connection to the feminine binary, caring, and materialization of all of these as a stroller. The acceptance of gendered usage sustains sedimentation by material repetition and creates temporary fixation in the cluster. In their social media accounts, they represent users as girls except on one occasion by saying, "Boys can use strollers too!" yet despite their message, form, and color, the product is almost embedded in the feminine cluster. These scenarios and skills are assigned by binary gender limits not users but also designers too. The design consultant account for wrecking ball toy with kinetic sand below and illustrates the pre-defined nature of these products:

[10] What do they call it when making the [kinetic sand] story, we need to look at the activities themselves a little while examining it. Now you have two main jobs in sand or dough. You either make it or break it. That's how the process works. In general, all of the institutions and concepts related to destruction come back to haunt masculinity. So that's the activity itself.

Destruction's connection to masculine binary cluster shapes the scenario of the kinetic sand to some extent, yet attaching it to a wrecking ball toy repeats another masculine materiality and fixes all of them in their clusters regardless of its form and color. On the other hand, unlike the stroller and wrecking ball, the military-themed strategic board game by the design consultant has a masculine gender script in both symbolic and structural dimensions. The design consultant expounds on his process of interpreting masculinity to a form below:

[11] It's called [military-themed game] anyway. So how do I express that masculinity here anyway? Look, it's extremely [showing the inside of the toy] using the language of machine parts and military ammunition. Pieces like ribs are visual cues like chamfered edges and so on [showing handle].

As he explained, with the color, form and theme, and scenario, it is a game for boys which is gendered in all dimensions. However, an intriguing detail that makes this game embedded in its binary cluster is how the children obtain it:

[12] This is already the brand legacy of the [military-themed game]. The story is this; I used to play this game with my father when I was little. If I buy it, I would play it with my child too.

Above, he defines the game as a father-to-son product that correlates masculinity with war strategies, military, and specific visual cues. The game establishes its own self-sustaining system that passes this conceptualization of masculinity from generation to generation. The military game and Stoller are representations of conventional femininity and masculinity with their context of use. (Denz & Eggink, 2019) uses the concept “materialized normativity” to define design practice “subjugated” to gender norms, especially binaries (pp. 2-3). These objects themselves can be considered as “materialized normativities” since they both collect and disseminate gender norms by materialization. Therefore, like the stroller and wrecking ball, the military-themed game carries sedimented binaries within, which makes them temporarily fixed yet almost embedded in their clusters. However, designers deploy these binaries in different ways, mobilize through them despite their attachments to their binary clusters. In the next section, I will elaborate on variant ways of crossing binaries in products.

4.2.3 Crossing Binaries in Clusters

In the previous part, I tried to give shape to a product binary relationality based on product categories and their engagement to their cluster. In this section, I will focus on designers' mobility inside and outside of the clusters. There are some cases in the literature that focus on material production by crossing or merging gendered skills, characteristics, forms, and users. Ehrnberger et al. (2012) argue that drills and hand blenders are gendered by their product category, and they aim to deconstruct materialized gender norms by switching visual product languages and putting the two end products in the public eye to propose new possibilities in design. On the other hand, (Stienstra, 2003) takes an essentialist theory that differentiates binary genders by their cognitive-motor skills as a base and develops toys with the gender cross-over approach by using those skills together in order to reach more gender-inclusive designs. Also, in my interviews, I noticed that designers cross binary keywords between structural, symbolic, identity dimensions and also within the same dimension in the materialities they produce and reproduce regardless of the *nature of the product*. But, in this case, the practice is itself not confined to inclusivity or equality. Beyond that, crossing binaries in clusters, my research unfolds the interwoven binary-materiality relationalities and reproduction in addition to deconstruction mechanisms in design practice. The design consultant explains crossing as:

[13] When what we're trying to do, is just trying to create a gender-neutral object from the product, you either try to avoid both. Or if you make a move towards one, you make a move towards the other as well, so that they balance each other. You may have made a fluid form, but at least you can choose colors that are attributed to masculine as color code.

While mentioning working outside of binary clusters, he addresses gender-neutrality of the product by crossing binaries with color and form, which are in symbolic

dimension. Emphasis on balance and defining neutrality frame the product's placement in a linear manner between feminine-masculine opposites. One of his toys illustrates the process of crossing between binary clusters.

[14] In general, all of the institutions and concepts related to destruction come back to haunt masculinity. So that's the activity itself. The story goes back to masculinity, whether in construction or anything else. When that happens, it inevitably begins to become gendered due to the activity within itself. But do we reflect it on the form, we do not. As far as possible, still bubbly and so on.

The quotation hints at the mediation between activity, form, user, product, and binary clusters that they engaged. The designer, in this example, consciously navigates through binaries, crosses symbolic dimensions with identity and structural dimensions. He conceptualizes destruction as a masculine trait, construction work as a masculine job and tries to soften them with “bubbly” forms in order to reach gender-neutrality and fit within the other products that target younger age groups. Similarly, the social entrepreneur crosses binaries within the pieces of her design.

[15] So, for example, a truck wheel is a very defined thing for boys. So if you make it [form of that part] a wheel and it's technical, you know the kids are going to make it a car—something he wouldn't define as a wheel. The wheel in [our toy] is a round pink candy. It's actually designed as a wheel. But because it is not that defined and has rounded lines, children can make it an eye or a nose. But actually, its function is to be a wheel.

She also crosses the symbolic dimension with the identity dimension with a pink rounded wheel. However, the aim here is different from the design consultant. While he endeavors to trim the structurally masculine toy with softer forms, she tries to increase possibilities in usage since it is a constructive toy. On the flipside, crossing gender binaries does not always pursue gender-neutrality. Two different examples

from the design consultant draw attention to how crossing binaries are not just deployed for gender neutrality and may indicate self-sustaining characteristics of the binary clusters. The first example is an activity toy he designed that targeted girls.

[16] When you say girl, what is it, fragile, I don't know what it is, but after all, there is a situation called girl power. So when we say girl's toy here, we always have something in mind, whether one of the keywords walking side by side is a flowery or whatever. There is no rule that this is necessary. It can also be feminine and strong. It can be feminine and fast too. For example, when we are making these products [modular activity tracker], we are talking about activity after all. When we say activity, we're talking about speed, fluidity, and dynamism. We tried to bring this dynamism together with feminine energy as well. But this does not mean that it will be fragile or flowery. No, there is no such thing. We still tried to keep it dynamic, energetic, athletic as much as possible but approached it from a feminine perspective. (...) Similarly ...[Dance dance revolution inspired toy] you may find it masculine or even aggressive. But the company and we found it... How to put it... It looks dynamic enough, energetic, even badass. But it also has feminine energy.

While describing the toy, he renders crossing keywords that he believes belong to opposite clusters. He describes it as feminine yet dynamic, not fragile and athletic. However, he still draws a line for femininity and provides dynamism insofar as possible. Therefore, even if femininity is re-associated with dynamism in the product, it is still confined to its binary cluster.

In line with the previous example, through the interviews, he mentioned the Nerf Rebelle series multiple times to address how keywords can be used crossed. Rebelle is pinked and shrank version of Nerf water and dart guns. His redefinition of femininity by crossing is quite akin to the products with “feminine touch” (van Oost, 2003) designed “for her” (Ehrnberger et al., 2012 p. 89), soften versions of original products.

To summarize this section, I presented findings on how dyadic conceptualization of gender and materialities co-constructs each other through temporary fixations of adjacent keywords and sedimentation by material repetition. First, I explained the designers' nature of translating keywords into forms like bubbly or chamfered. However, in these binary clusters, these forms and keywords also correlate to activities, skills, characteristics in which femininity and masculinity materialized. Aligning my findings with Ehrnberger, Räsänen, and Ilstedt's (2012) study of gendered product categories, I contemplated on a 'nature' of products, temporally-fixed and centric positions of binary clusters coincide with their gender scripts in structural dimension dependent on conventional femininity and masculinity. H. Kaygan et al. (2019), in their account of the gendered product categories, based on (Connell, 1987) work, discuss the representation of hegemonic masculinity within a product category by revealing hierarchies between users and also products. However, in this case, the product category itself constitutes a hegemonic form of masculinity and also femininity by demarcating the appropriate form of femininity and masculinity. Moreover, designers do not use these binaries always in line with their clusters. They cross masculine and feminine clusters in symbolic, identity, and structural dimensions in order to reach gender-neutrality, soften or harden the products for containing them in their clusters. In the next part, the reproduction mechanisms building on these binaries are presented.

4.3 Reproduction of Gender in Meta-Design Process

In the previous section, I elaborated on binary clusters, sedimentation of binaries by material repetition, which creates temporal fixations, and crossing binaries in clusters in many dimensions. Designers, in a mutually shaped design process, grapple with dualisms, trying to place themselves inside or outside of the binary clusters; consequently, they build, rebuild and/or damage the clusters. In this section, I build on the binary clusters and explain the ways in which gendered materialities are produced and reproduced in interactions with other actors while realizing that

this reproduction shapes the designer in return. I propose wayfinding and enhancing as conceptualizations of the processes in which temporal socio-material relations co-construct gendered materialities and designers.

4.3.1 Finding Way Among Binary Clusters

This section conceptualizes the products and designers that reproduce gender norms with re-segmentation of existing gender-neutral products. The interviews and the content analysis revealed that the wooden toy designer, as a small business, experimented with various users, communities, and product categories, trying to find a way in order to match the right ones yet following the binary trails. So, to render this mechanism, first, I will present their trials with the launching and gendered expansions of their first products. Then, I will discuss the wooden stroller to represent designers' motives and process re-materializing existing materialities, which are connected to the story of two dollhouses that the wooden toy brand launched.

In their first years, the wooden toy design company navigated through product categories while they were negotiating with binaries. The account of their flat-pack truck reflects their experimental approach to materialities. The wooden toy designer explains that three out of four of their first products were produced with the same mold, so they had similar forms. However, after they realize that the first three products require extra labor for assembly and take a larger room for shipping, they reevaluate their product range and decide to design a flat-pack product that is constructed by the users. He continues to unfold:

[17] At the beginning (...), you make an attempt, and as a result of this attempt, you actually try something. (...) But [all the designs] are an experiment designed in the first place; we threw a stone into the sea, into the water.

Above, he is expounding their first trials as a toy brand, a startup. So, they are trying to find a way between different products, directions within production dynamics, and stocking. He continues to explain their experiments in forms through these attempts as:

[18] [Design of their flat-pack truck toy] it was actually an experiment...when designing it, you know there are big mega trucks on Discovery Channels, even the wheels of which are 2-3 times the height of a human (...) We wanted that form, such a big truck, a powerful truck, and we wandered around those forms. Because well, we wanted it to be like a yellow construction machine.

Within their trials, testing the waters in the quote implies their trials of products from gender-neutral to a gendered one which is strong, big like a mega truck in which binaries became the way out. The account renders how the designer's navigation around product ranges, socio-technical organizations is enlightened by binary clusters in which gender script becomes the way as an underlying logic while they are seeking one. In addition, the mom community they affiliated with led them to pursue another side of the gender binary, as he explained below how the pink version of the one walker mentioned above came to be:

[19]...we always made the products be tried at [Mom Community] events and stuff. There were sometimes sales or something; we listened to people's opinions, which mothers, which children, how they ride, what they want. Here comes a mother, says, make it [one of the walker] pink...

The account above points to designers' enthusiasm for observing users and listening to parents in their events which gives rise to the pink version. However, this reproduction of gendered materiality further echoes throughout their product span. After the first product, they continue to apply the paint to other products. He continues to clarify:

[20] ... we entered that channel once, we took the test of the colors of pink. Instead of doing a different test, we wanted to go with a registered color.

Even if they started to use the color pink in one of their products, they applied it after many others because of practicalities. Continuing to use the color reflects socio-technical organizations' like tests, standardization processes' relationality of reproduction of gender through materialities and also their constitutive influence on pre-, on-, and post-design process. However, when he is expressing his dilemmas of the account of designing simple, Scandinavian style wooden toys, the designer explains:

[21] You will either go on an adventure with a designer trip and have low sales numbers, or look at it as a business where you have certain responsibilities, okay, the design and the user are at the center, but as I just said, there are the realities of life.

Even if the color does not stand out generally because of their motive to highlight the naturality of wood, his concerns, socio-technical organizations and their connection to mom community at that time converge, provide a way out for their search for right users and work as a material reproduction of gender norms while they are trying to find a way. In this process, they have launched an array of products from feminine, gender-neutral, to masculine, a. They continue to add new gendered products like the stroller. He recalls the initial motivation of the stroller as below:

[22] The stroller is actually designed when a friend on the team kept the topic hot, as it mattered for a long time. Let's make a stroller! Let's make a stroller! It sells a lot, it sells a lot, why don't we.

He states that one of the partners persists in including stroller in their product range because of its financial return. So, in their process of finding the appropriate user group, after they tried different material practices and configured by socio-technical organizations, they found a way out with the binary product range, and by keeping on with gendered products like the stroller even if the product is not gendered in symbolic dimension. Similarly, the two dollhouses they designed indicate fluctuations between gender-neutral products and gendered ones, transformation in symbolic dimension. He explains that they first designed a flat-pack similar to the truck, yet unlike it, the dollhouse is colorless raw plywood. He continues the story:

[23] This [the simple dollhouse] on the left is the first house we designed. The basic idea there is like [flat-pack truck], it should be snap-on, no prints on it this time because the prints on [flat-pack truck] have nothing to do with the products in our other toys, there is no such graphic product, you know that. Let's make it simple, let the child paint with his own imagination. But this colorless, plain form was understood by very few people. (...) As a result of all this, we said, are we pushing it too hard?

The failure in the first dollhouse and the account of compelling users for gender-neutral products. However, instead of canceling a failed product, they designed a new dollhouse to adapt to the existing materiality: Barbie House. He reflects on the design of the new house further in the quote:

[24] ...when you look at the overall scene, a house in a toy company, like a Barbie house, is a must, if you think commercially. Because it's a bestseller, so it's a product that has value.

He categorizes the dollhouse as a must-have of a toy brand, a product that pays off, so the design of the dollhouse is part of existing material practice. While he re-materializes the simple dollhouse as Barbie House, he reproduces the gender binaries

in the process of trying to find a way between a simple dollhouse and Barbie House. Re-materialization here means recreating products and product groups with various motivations. Denz and Eggink's (2019, pp. 2-3) concept of 'materialized normativity' corresponds with dollhouses like the stroller (see 4.1.2). In this case, re-materialization occurs because of maintaining existing material practice which is also the materialization of normativity. Stroller and dollhouses are materialities embedded in their binary clusters because of different reasons. The former one, the stroller, is a symbol of motherhood while the latter, the dollhouse, is osmosed by existing material. However, the design process and practice of both of them are mirrors of materialized normativity in which they are subjugated by gender norms. The stroller is perceived as gendered before it is designed, and the dollhouse is re-materialized by existing gendered practice. Therefore, the story of dollhouses and the stroller demonstrate the products' gendering process, not only in on-design but also pre-and post-design processes.

4.3.2 Binaries as the Source: Leaning on Stereotypes

This section examines the reproduction of gendered materialities through the design process, particularly by the constant instrumentalization of binary clusters and enhancing them with re-materialization. I elucidate the process of sedimentation by revealing reproduction mechanisms. The example of the military strategy game that I introduced in section 4.1.2. also reflects the enhancing mechanisms the design consultant expanded on conveying masculinity to material objects by using angular forms and chamfered edges in the military strategy game. He specifically mentions the integration of armory language to support masculinity. He also includes the background story of the game and obliquely re-materialization process below:

[25] If you look at the old packaging of [military-themed game], there is actually sexism all over it (laughs). ... a father and son play the game. The mother listens to them while washing the dishes inside. It's very traditional,

and it's like - a father-son product. It is already a product that should have a masculine language. (...) Both by language and color (...) you establish masculinity.

The comparison between old and new packaging indicates the sexist background of the game. In time, sexist packaging visuals on the package transform into chamfered forms in order to hold masculine characteristics of the game up in its binary cluster. The explicit gender roles in the visuals of the former version disguise in symbolisms of chamfered edges and military themes, yet it delivers original meaning with the form. Similar characteristics can be observed in another re-design project of the design consultant, which is a classical code-breaking game. The old version demonstrates a younger Asian woman almost as a probe standing behind a middle-aged white man sitting on a chair who represents *intelligence, mind, genius*. This time the packaging visual signifies colonialism as well as sexism. The designer proposes many re-design alternatives that he displays on his website, from *soft* to *hard*, yet the company chooses the most chamfered and darkest alternative to match with the coding connotations of the game. The new version is reminiscent of the old one in terms of centering intelligence and the theme of code-breaking. While the old version connects all of them explicitly masculinity, the new version conveys this relationship in a more subtle way with a form similar to a military-themed game. Although coding does not bear masculine connotation as it used to be, chosen alternative with chamfered forms and dark colors are now represents geniuses in different shoes implicitly and reflects the product's legacy. However, interestingly the military-themed game's 'from father to son' scenario uses nostalgia as a vessel and instrumentalizes it as a reproduction mechanism. "Consolidating masculinity" to a "product that should be masculine" evinces the gender regimes that radiate as the material performance of gender as well as hegemonic masculinity (see section 4.2.3). Since the game is the redesign of the old game, he re-materializes gender norms to re-establish masculinity with chamfered edges and military looks; and determines how masculinity should be performed with these materialities. Hence, he

is on the side that produces 'Barbie House' in the industry; not the one that is absorbed but creates materialities that absorb; he explains his design process with his proficiency in his area in the quote below:

[26] Since we are not a very neutral design office, there is no need to us what a girl is, whether it is this or that age group. We are already in control of the situation. That's why people work with us anyway.

He corresponds to materialization and re-materialization of gender norms as the knowledge he acquired, an asset for his preferability. Reproduction of gendered materialities not as a mechanism but a practice shapes designer's performance as a 'design consultancy firm that has comprehension of accurately deploying gender binaries and materializing them.' So, he leans on the binary clusters, uses them as apparatus, materializes normativity, and integrates all of them in his mastery in design practice in this mutual shaping process. The design culture he belongs instrumentalizes not just nostalgia and normativity but also counter cultures that are becoming mainstream, like in the Nerf example (see 4.1.3). He explains this with cultural feed below:

[27] ...until now, there was no hero or cultural product that catered to girls who were interested in that superhero fighting part. For example, the weapon Katniss Everdeen uses there is a bow and arrow. That's her specialty. So Hasbro, while releasing this Nerf series, made the version for girls in the form of a bow and arrow.

He explains how the new understanding of femininity which assigns 'masculine characteristics' to girls, is shaped by cultural materials. They want to achieve this with the context of use and scenario, although in the design side, they still exclusively depend on the binary conceptualization of gender in symbolic level with form and colors. The keywords he uses like being hero, assertive, badass might break

materialized normativity because they reassign these to girls yet reproduce the norms with specific design decisions that shape the material performance of gender. Therefore it does not lie beyond ‘materialization of girl empowerment’ with its design process. Similarly, Repo (2020) defines this kind of material practice as feminist commodity activism and associates it with Sara Ahmed’s (2010) “happy object” to highlight the relationship between these materialities’ normative roots and their promise of equality. On a par with Rebelle, even if the product promises ‘assertiveness’ and ‘heroism,’ the design process reproduces existing gendered practice by materializing “girl empowerment” in this vein, leaning on the binaries and polarizing user groups.

In brief, in this section, building on the binary mechanisms of gender script, I conceptualized ways of reproducing gendered materialities as ‘way finding’ and ‘enhancing.’ First, I elaborated on wayfinding both as a practice of navigating among binary clusters to be translated into form and as a means of surviving amongst various socio-material organizations. In the case of the wooden toy designer’ fluctuations between gendered and gender-neutral products, and also different communities. Since the designer tried different ways around binary clusters, inside and outside, and at the end of the day, reproduced gender and configured by gendered materialities in these temporary relationalities, I conceptualized this as finding a way within binary clusters. Their company’s approach towards user groups with an array of feminine and masculine products at the beginning, going into a more gendered way based upon their relationships with the mom community, renders their path. However, beyond their community relationships, they are also shaped by the existing material practice of ‘Barbie House,’ which relates to the re-materialization of gender norms by existing materialities. Similarly, the design consultant, forged by reproduction of gendered materialities, but in contrast, based on his knowledge that connects stereotypes into forms. The design culture that the design consultant belongs to determines and feeds on stereotypes by leaning on the reproduction of gender. The design process he adopted re-materializes the sedimented gender norm with product forms, instrumentalizes the nostalgia by maintaining existing gendered

materialities, and cooperating new waves like ‘girl empowerment’ into normative, polarizing binary systems and with all of the reproduction gender norms and materialities.

4.4 Deconstruction of Gendered Materialities

In the previous section, I detailed the ways in which gendered materialities and gendered binaries are reproduced. Even if some products are tailored to be gender-neutral, sometimes because of the product's connection to binary clusters, sometimes the designer's use of different dimensions of binaries in the design process they are considered to be gendered. In this section, I will present how designers actively deconstruct and reconstruct these gendered materialities and gender scripts. First, I discuss deconstruction of binary categories by the ambiguity of use scenario by extension user. In addition to that, I examine deconstructive practices with Marres’ (2015) the concept of materialization of publics and products with issues. Then, I argue deconstruction of designers and products by socio-technical organizations and other material cultures.

4.4.1 Un-Defining User, Defining Problem: Deconstruction of Gendered Materialities for Reconstructing Publics

As I discussed earlier in many sections, subcategories of the toys, their use scenarios, and the connection of them to their binary clusters afford users and designers to play with reproduction and deconstruction mechanisms of gender roles. In this part, I explore ambiguity as a deconstructive approach that aims to break binary clusters followed by reconstruction of gender through community relations.

For the account of the social designer, the scenario and the category of the toy allow designer mobility to avoid binaries and pursue inclusivity with the product. She centers universality, inclusivity of the product as the base and shapes the product around it because of the first brief, providing toys to children who cannot access,

especially children in disaster areas and in displacement like refugee children. Therefore, in order to meet this wide range of users and reach this universality, she avoids exact definitions in the industry as she puts it below:

[28] Everything that provides a game-toy experience that we see on the market now also carries the gender codes of the past. (...) I didn't make or design a defined toy, thinking that such a definition should not exist. And to have such a mute, universal thing in the content of the kit. It [muteness, universality] was, for example, a limit, a criterion I set for myself. Including the colors I chose. Because the color-coding of toys, in general, affects the choice of children. Here is toys, like pink-blue etc. You know, gender codes are [transmitted] directly with colors and actually with the concept. Here [it is designed] for boys to build construction machines, something like that.

While she un-defines users, she also abstains from significations of gender not just in symbolic dimension with colors and forms but also includes structural dimension allied with use scenarios. Therefore, she determines many sieves that flow from this aim of inclusion, forming herself a non-cluster with keywords like imperfection and transformation, as she explains below:

[29] In fact, [one of our] configurations of [our toy] were to take the trash and turn it into a toy. You know, all the toys currently on the market [look] excellent. For example, Barbie symbolizes the perfect female body; you need to be blonde, you got to be this size, etc. Whereas [in our toy], you are making a character out of garbage; you are making a doll out of garbage. It doesn't need to be perfect anyway. You know, I always tried to find a concept that was as undefined as possible and opposed to those definitions because it had that motivation underneath.

Besides its category as a constructive toy, the scenario of her product, transforming everything into a toy with it, deconstructs structural and identity dimensions to some extent since the users determine their own play scenarios. Also, open-ended usage

of the toy merges with the universality of the product to attain inclusion. The imperfect, undefined forms divorce from gender-script and adopt ambiguity as a deconstructive tool as well as the new script; therefore, as she illustrated below, avoiding gender norms as well as repetition of gendered materialities becomes her strategy for gender-neutrality.

[30] Or if we are making hands, if we are modeling hands, it is a man's hand, not an Action Man hand or something, but such an undefined cartoon hand. It also affects the form there because there are already so many defined and stereotyped gendered things and objects that I try to stay as far away from it as possible in the toy world.

In comparison with the dollhouses of wooden toy brands, avoiding existing materialities might create an opportunity to form their own scripts instead of being absorbed by them. Similar to the design consultant, she is also aware of the binary clusters and reproduction mechanisms of existing materialities in toy design, as she also revealed in Quote [28], but she deploys this knowledge to not just bypass the binary clusters but reverse the norms on a small scale. She explains this attempt to reverse below as:

[31]...when designing the parts, namely the kit, I paid particular attention to having an undefined form. And parts like the wheel and so on I made them pink. Because unfortunately, there were things that were categorized as such as girls' toys and boys' toys. (...) And there [during the game], they look at things like [colors of the pieces]. Whether boys stop playing with that piece or not, just because it's pink. Actually, that was one of the things I tested in those encodings [while user testing]. But since what I presented to them was undefined, they didn't get too concerned about it [the color and form of the piece]. It was something that actually encouraged them to play together. Well, it was a trigger in that sense.

She deploys symbolic dimension in a deconstructive way. Even if, at first glance, remarking feminine/masculine, pink/technical crossing, usage of the color pink for masculine-assigned piece resembles the ‘for her’ approach (Ehrnberger et al., 2012; van Oost, 2003), pinkyfied bonbon as a wheel do not reproduce the materiality of a cute car within binaries, even deconstructs the dualistic fabric of gendered products with its multiplicity of usage, moreover reconstructs plurality. Therefore, the usage of ambiguity as a script goes beyond gender-neutrality and reconstructs norms by crossing the identity dimension with the symbolic dimension. Embracing ambiguity as a script and user configuration actually stems from their original brief, which is to deliver toys to children without access to it. However, their objectives evolve with the communities they engage. The company is defined as a civil initiative from the beginning yet evolves with publics and the industry as well. The culture she relies on revolves around the additional value they created for the communities they affiliated with, which they reach through the brand in the first place by their product. For creating impact, they employ workshops to reach children in which their products are used. Marres (2015) portrays the socio-material-technical organizations that centralize objects that enhance participation. Even if Marres & Lezaun (2011) refer to technological artifacts, their account of material-public encounters involves the depiction of artifacts as “objects.. not just subjects..., acquire explicit political capacities” resonates with the social designer (p. 3). Similarly, she considers her product to embody messages that advocate play.

[32] On the other hand, when you get involved in the toy business... By the way, we didn't leave the product-oriented mindset, but there are still sexist toys in the sector, this approach from the layout of the store to its design. On the one hand, there are the products we call collectible, and there are toys and products that are made into objects of desire in the disposable business and lose their meaning after owning them. In fact, we thought why we wouldn't voice our concerns in the business, why we wouldn't here (...) why we wouldn't start a transformation here and decided to position ourselves as a toy brand among with the product...

She raises many social issues related to the toy industry and children, like sustainability, gender equality, over-consumption. Some of these issues actually accord with the scenario and design of the product, like upcycling and inclusivity. They start their journey to create impact and transform the industry related to that unthrive gender mechanisms with both usages of products and community organizations. However, workshops as transformative tools might be a reductive approach that centers on materiality for change. She explains how the product embodies this message:

[33] In those tests, we made such a decision because we saw that the product passed the function and that message. Of course, when we were on the market in the first year, we also had the concern of creating a community, whether they have children or not. Seeing that we could convey the message to them [adults] as well, we positioned ourselves that way. On the other hand, it is like a normal toy brand, but on the other hand, to turn into a structure that designs for the game advocacy, the right to play, the right of the child, and designs for their needs, and on the other hand, talking to the sector.

The brand also grows with the communities they are involved in within social incubators, NGOs, or museums and disseminates through different areas, issues. To expand it, in their social media accounts, they have many issues that they tackled as Instagram pinned stories which include a wide range of issues like play advocate dads, equal play, upcycling, toy donations to NGOs, etc. Marres (2015) argues that these material-mediated socio-material entanglements may veil the complexity of the issues, in this case, gender equality, and she discusses functional and dysfunctional roles of material participation in the making of change. The product deconstructs gender roles in its own micro-interaction and reduces issues to the material itself, which correspond with the social designers' account of emphasizing mere simplicity of joining the community and being part of this impact. At the

beginning, creating this community with the name of the brand, making a donation campaign for purchases, and using the workshops where their products are used as a tool for the change they want to create shows the centrality of the product in making an impact. In the engagement, centering use products for the participation to solution reduces issues to commodities (Marres, 2015; Repo, 2020). Also, all the issues that they tackle on the way resonate with Marres's critique of the dysfunctionality of material participation but also add dimension to socio-material encounters, the new social innovation cultures that want to suffice to all. Yet, while they grow, they change the name and go into a different path, center events rather than workshops, and lead community members to work in issue-specific sub-groups to create impact. Therefore, it becomes a socio-material platform that gathers publics to work on action rather than a material-centric brand community that just collaborates with users rather than community work similar to Constanza-Chock's (2020) conceptualization of community-based design that de-centered the designers themselves. Gender equality as one of the issues emerges as not just a sub-group but persistent messages that deconstruct the gendered materiality of the toy industry through socio-material engagement to communities. Material participation is articulated to the long-run change of a complex problem instead of just fixing a problem (Marres, 2015). The designer's socio-material approach that includes communities to deconstruct normative ways of doing in the meta-design process makes her mediator along with products for this gathering of material publics. In the next part, I scrutinize how the different material cultures deconstruct and reconstruct the gendered materials, breaking repetitive material sedimentation cycles in design through the socio-material entanglements.

4.4.2 When Publics Makes the Designer: Deconstruction of Gender in Post-Design Process

In the previous part, I discuss the deconstruction of gendered products and the reconstruction of equality through materialized participation with a consistent aim

of creating impact. This part explains the different sides of finding a way, not through but outside of the binary clusters this time. In this part, I discuss how designers are drowned by adjacent material culture(s), configured by socio-material and technical organizations, and deconstruct gendered materialities in this process.

Unlike the social designer, whose aim is to transform the publics through community engagements, the wooden toy designer navigates through users, communities, product categories in order to explore materiality, practice, communities that match wooden toys. Their engagement with the mom community untwined and re-entwined materialities in the process of product design.

[34] ...there were many people saying that this [the walker] is very beautiful, is there any pink of it. Later we realized that it wasn't the right thing; it wasn't a place with the right user; it wasn't the place with the right parents. But even that is data, even realizing it, is data. Knowing the user group well, guessing what people want, making the products tested

Besides the benefits like user testing, the designer tours around users to meet the right group and in this process, while reproducing gendered materialities as explained in previous sections. Then, they are configured by one of the other channels that deconstruct gender norms through neutrality and naturality. In their re-entwined relationships, the new culture they engaged in, a niche genre of toys based on Montessori and Waldorf education systems⁹ that value the naturality of materials and are considered as gender-neutral. The new re-association also came up during the interviews when he is explaining their inspirations, and also can be followed in their use of hashtags in social media accounts, the events that they participate in which connected them to a more gender-neutral product realm even if they have

⁹ S. Richardson (2015) argues that Waldorf and Montessori education systems do not center gender equality yet the materials they use and their main perspective fosters equality.

many gendered products. These new intersections shapes designers' depiction of users, as he puts below:

[35] I don't attempt to convince someone to buy wooden toys instead of plastic toys. (...) [the segment we are targetting] is a segment that wants their child to grow up in better quality and healthier manner,...a segment that wants their child to use better quality and safer toys. (...) Well, it's not the economic A+ I'm talking about (...) I say A+ for those who value [their children] for those using our products. They are also questioning, that is, we have seen that mothers and fathers who do not give their children an iPad, do not necessarily make them wear pink shoes or pink t-shirts, who try to raise their children naive, and cater to the essence of the child, prefer our products.

The portrayal of the user above aligns gender-neutrality with social class, awareness, and use of non-plastic toys on many levels, which correspond to the Waldorf-Montessori education. However, they did not directly target gender-neutrality and target this group. They navigate through different communities during their design processes, and the user group and the meanings that wooden products afford, such as neutrality and health, brought them to this point. By taking the previous quote into consideration, they do not cross binaries in products but other cultural concepts that have symbolic meanings, such as the naturality of the wooden toy and colorfulness of plastic products. Marres and Lezaun (2011) define the relationships within the publics as an arena of material entanglements and their production which also reifies the material publics. Materialities and their attached issues, the messages that they carry form the publics, and materialize participation (Marres, 2015). Similarly, but in a different way, the connotation that comes with the natural material, health, and also awareness shapes the designers' stance in public and moves the brand in a more gender-neutral realm. However, this tendency towards neutrality does not derive from public material entanglement but sometimes constructed socio-technical organization. He explains the practical dimension of gender-neutrality below as:

[36] A product does not need to have 5-10 colors. It doesn't need to be 3-5 colors. It is nice for us that it is in one color, its stock is understandable, so parts are easy to obtain, so you don't have to ask if yours is pink or yellow. These are the problems we are experiencing.

As he states above, tides in putting himself on the gender-neutral or gendered array refer to their trials with different communities. However, they deviate from gendered ones because of convenience in production organization and connotations that wood carries. His binary conceptualization of plastic and wood in the previous quote, painted and natural finish in this one reflect their new approach. Therefore, the convergence of practicalities of gender-neutral products, designing for younger ages besides placing themselves in natural toy fringe provide them a new community.

The example of the child-size kitchen demonstrates the re-intertwined materialization of a gendered product category. Both products, kitchen, and dollhouses, are targeting the same age group, preschoolers. While they did not consider and framed the dollhouses as gender-neutral products, from the beginning, they classified the kitchen as a gender-neutral one, probably because of Waldorf and Montessori education's conceptualization of baking as a play scenario like other real-life activities for preschoolers. He compares a simple dollhouse with a kitchen to explain the trial error below.

[37] We pushed it in [Simple dollhouse], and it didn't work. Well, if the kitchen had not responded to the demand, if the sales performance had been low, we would have done it too; we would have turned pink. But we saw that there is no such tendency from the users; boys also bought this product a lot, we saw it from the posts. In fact, we started like that in all of them, so was my house, unisex started. But it didn't work, but the kitchen did.

While the first dollhouse is reproduced gendered by the existing materiality of Barbie House, the kitchen deconstructs gender roles through materiality by including all users in a structurally gendered activity and also crossing binaries between structural and identity dimensions. However, this deconstruction mechanism enacts not just by avoiding binaries on-design process but their re-constructed relationship with a new realm -Montessori and Waldorf toys- in pre-design and their constant emphasis on gender-neutrality of the kitchen in the post-design process. The account of coercing gender-neutrality shows their ongoing fluctuations and the intersection of practicalities that they considered, and the deconstruction mechanism that occurs in their meta-design process with materializations.

To sum up, in this part, I illustrate deconstruction mechanisms that designers deploy in the design process. I conceptualized this deconstruction in two distinct ways of creating ambiguity and interaction with neighboring fields. However, practices detailed in these distinct concepts conceal the common ground of materialization of participation and creating publics. The social designer determines her goal as transforming the gendered toy industry with the community, and the wooden toy designer who adopts different communities and places his brand in a more gender-neutral realm with the affordance of the material. The first designer uses crossing as a deconstructive tool to reconstruct gender roles and generate a new script rather than a gendered one, based on ambiguity which breaks the binaries. Moreover, she reconstructs gender norms not with materialities but also by transforming communities in many issues such as equal play, sustainability, free play, overconsumption. Marres's (2015) conceptualization of materialization of participation which centers the product for social awareness has the possibility to reduce complex issues into simple material-related one that resonates with the case of the social designer. However, her connections to grassroots organizations and creating sub-interest groups to bring people together detract the company from performativity and adduct to activity. In this form of material participation, publics gathers around the issue of equal play and this socio-material encounter mediated by designers as well as materialities. This enhances Marres's (2015) understanding of

material participation and approximates it one step closer to action. On the other hand, the wooden toy designer's search for the right socio-material-technical combination guides him to a more gender-neutral realm, and unlike the social designer who is an active actor of change, the wooden toy designer takes part in the deconstructive side of the design by constructed by the publics. In this process, communities, re-intertwinements, and practicalities are enacted as gender deconstruction mechanisms through materialization. The practicality of unisex products hence socio-technical organizations, the association of wood as a material with naturality against plastic led designers a re-association with gender-neutrality to meet more socially conscious parents. Their convergence with the more gender-neutral, another side of toy categories intervenes the mechanisms of reproducing gender constantly and deconstructs it through gender-neutral, inclusive materialities in the meta-design process. Therefore, designers adopt or come across different approaches to the deconstruction of gender norms through materialities. The socio-technical organizations, socio-material entanglements, materialized participation co-construct designers, users, products and other actors which designers involved in brand launched.

4.5 Summary

In this chapter, I present the analysis of the semi-structured interviews of three designers and community members/parents, which are incorporated with the content analysis of the online data. I discuss findings of analysis with the related literature to elaborate gendering of the toy design process from different perspectives.

In the first part, I draw a frame for these three designers' positions in the toy design industry which sheds light on their practices of materialization of gender. All designers have different sieves that shape their products, configurations of their users hence their practices. The wooden toy designers' attachment to production and direct contact with the users as well as the wood material's connection to naturality is determinant for the gendered materialities that are produced in the design process.

On the other hand, the design consultant's configuration of the user with their material choice universe ties him to the more commercial side of the toy design industry which applies gender segregation from the beginning of the design process to placement of the products on the shelves. The social designers' practice however, involves many actors from different fringes of activism to clients, advisors who are close to the design consultants' toy design sphere. In any case, regardless of their spheres, all designers are aware of the binary conceptualization of gender and they produce, reproduce or deconstruct it through the design process in accordance with their materialization practice.

In line with the Rommes (2006), Rommes et al. (1999), Rommes et al. (2011) and Van Oost's (2003) works, designers assign gendered characteristics to the products in not just visually in symbolic dimension but also in structural and identity dimension by connecting skills, characteristics and traits to femininity and masculinity. However, in the design process, these correlations develop organically by translating adjacent keywords to products with usage scenario, form and usage context of the products. In order to explain this process better and to frame polarization better, I offer the term 'binary clusters' and build the analysis on it. The binary clusters mirror Butler's (1990/2011) arguments on sedimentation of gender norms into objects over time. So, these two clusters include objects, products as well as their related keywords, character traits, activities that materialized on pre- on- and post-design process, and forms material performance of gender (van Oost, 2014) by repetition on the way. These connections establish temporary fixations and entrench some products such as toy stroller, construction toy, military-themed game, dollhouse to their binary clusters. Ehrnberger et al.'s (2012) conceptualization of feminine and masculine product categories correlate with the findings on the stability of these products, but it also intersects with the H. Kaygan et al.'s (2019) study on the hegemonic form of masculinity with the multiple masculinities and femininities within some product category. However, for the products that I discuss with the designers over time and regardless of their form and color, they are at the center, almost embedded in their binary clusters. Furthermore, they are as product categories

materialized hegemonic masculinity and femininity, reflection of conventional gender norms. Sedimentation of gender norms with material repetition re-establishes temporary fixations through the design process with the use of products and, hereby, as Butler (1990/2011) argues naturalizes binary conceptualization of gender naturalizes. This fixation does not just define the *nature of the product* beforehand in the pre-design process and also limits designers with predestination. Designers perform mobility around binary clusters and play with them by crossing binaries, albeit the stability of some product groups. Exchanging or merging binary-assigned traits is applied in previous studies with a critical design approach (Ehrnberger et al., 2012), or achieving more gender-inclusive products (Stienstra, 2003).

In accordance with these studies, my findings reveal that designers cross feminine and masculine assigned characteristics in symbolic, structural and identity dimensions in order to obtain gender-neutrality, deconstruct gender in/of product or rasp the masculinity/femininity of the products. If the product category is temporarily fixed in its binary cluster, designers cross binaries as a tool to cope with their sedimentations. In contrast, the aim of filing the masculine or feminine assigned traits is creating gendered products for the opposite gender which is in accord with the “for her” approach noted by van Oost and Ehrnberger. Crossing practice is also deployed to deconstruct gendered materialities. Even if the boys version of a girls toy or girls version of a boys toy re-assign the gendered traits, approximates binary clusters by re-defining material performance of gender to some extent, since the products are still fed by the clusters in some dimensions to target binary segments hence, the practice reproduce gender by this cultivation and polarization. On the other hand, crossing might unhinge and reverse gender norms that materialized in toys. Deconstruction of gender by crossing is not confined to the on-design process with design decisions, it can be performed in the post-design process which can be observed in consistent social media posts on gender-neutrality of the child-size kitchen.

The temporary fixations in the binary clusters or crossing binaries in them reflect the conceptualization of gender in and of design but considering entangled relationships,

gendered materialities are reproduced in the meta-design process by designers' finding way among binary clusters and leaning on stereotypes. The former one illustrates the manifestation of binaries as an underlying logic and gendered re-materialization process while designers navigate among binary clusters as well as communities, users, and socio-material organizations. Designers who are involved in the products' cycle from production to sales might try many paths inside and outside of binary clusters to survive and reproduce gendered materialities during these experiments with the community relationships and supply-chain specific needs of designers. Furthermore, dominant toy design practice which heavily bears traces of "materialized normativity" (Denz and Eggink, 2019), absorbs other gender-neutral material practices with temporarily-fixed gendered products and gendered re-materializations in the making of toys and shapes designers with it. Despite the experimental nature of finding ways among binary clusters as a reproduction mechanism, leaning on gender stereotypes revolve around intentionality. The more commercial side of the toy design sustains existing gendered material practices, consciously using binary clusters and instrumentalizing users' sense of familiarity to penetrate to their material choice universe. Examples presented in the chapter reproduce gendered materialities by taking binary clusters as a base yet incorporate different mechanisms such as instrumentalizing nostalgia and materializing 'girl empowerment' by re-materialization of repeating gendered forms hence not just leaning on but also sustaining stereotypes in this process. Similar to finding a way among binary clusters, leaning on gender stereotypes as a material practice within the design process shapes designers with requirements specific to the design area. Designers' knowledge on binaries, the ways they deploy them, translating them into form and coherence of all them with the use scenario and material choice universe of the user defines designers' practice of leaning on and temporarily fixes designers to binary clusters as well as products, character traits, use scenarios.

On the other hand, deconstruction of gendered materialities through the design process by embracing ambiguity as a product script rather than defined binary, material participation, and interaction between adjacent design fields. Social design

as a practice strives to create impact with products and systems, but specifically, concerns of gender equality in toys shape the design process. That being said, to reach inclusivity, ambiguity as a script, avoiding stereotypes and codes that are permeated to toy design materializes plurality instead of binary so, deconstruct gendered materialities by un-defining users. The nature of the product groups is also a key determinant for the designers to mobilize outside of the binary clusters. While structurally gendered products like a stroller, construction, or military-themed toys delimit designers in binary clusters, toys with open-ended scenarios like constructive toys afford the path that can go deconstructive practice and gender-neutrality. Moreover, this affordance is not just confined to the product groups but also materials like wood. Wooden toys' relationship with the naturality, its intersection, and interaction between more equalitarian toy genres like Waldorf and Montessori might break temporary fixations in the on- and post-design process which is exemplified in the gender-neutral child-size kitchen. However, these processes are forged by crossing material practices, user groups, product categories within different socio-material-technical organizations.

Designers' interactions with different communities are also included in the deconstructive practice. Analysis of the interviews and online content show that designers and community relationships can go either way, they may converge with the reproduction mechanisms of gendered materialities or deconstruct them. Nature of material participation comes to matter when designers' relationship with communities operates as a deconstruction mechanism. Social design instrumentalizes design practice for creating impact in which materialities produced through design become mediators between issues and their users or communities. Especially, while the products are put in the position to rectify social problems regardless its complexity, socio-material entanglement related to the specific issue, gendered products, in this case, gather their publics through material participation (Marres, 2015). The question of whether materialities mediate this participation or in the center of it determines the nature of material participation. Evolution of the community that the social designer shows both sides of this nature: first a brand

community that revolves around commodity, instrumentalize issue for the sake of brand (Repo, 2020), and then works with the community while transforming community to work with sub-interest groups, deconstructing gender norms both on-design process by design decisions and post-design process with messages, being an active agent of change and reconstruct communities by creating publics for the inequalities reinforced by the toy industry. These intersections of socio-material-technical practices expanded through the pre- on- and post-design process frames deconstruction of gender in toy design as a multi-dimensional issue. Reconstruction of communities not fixes or reverses this issue by only material participation but also is articulated to acknowledge the social aspects of this material practice, undoing, undefining existing materialities, a new script of ambiguity, and deconstructive crossing.

CHAPTER 5

CONCLUSIONS

This final chapter draws up the study together to present concluding remarks. Firstly, I revisit previous chapters for an overview of the study. Then, I present the main conclusions by discussing findings with the literature, followed by the limitations of my research. I finalize this chapter and the study with recommendations and possible implications for future studies.

5.1 The Overview of the Study

This study set out to grasp complex relationships within production, reproduction, deconstruction, and reconstruction of gender through different materialization practices and toy design processes. In the first chapter, with my personal background, I presented a concise overview of the existing studies on design and gender literature and placed this research on the gap, which is an exploration of the relationship between gender norms and design process yet focuses on distinctive material practices of different fields of toy design.

The following chapter, literature review, composes previous studies and theories on gender and design fields. Since gender studies build on a large body of feminist work and academic studies, I started the chapter with conceptualizations of gender through time and later on presented the prominent studies that related to the relationship between gender and both design practice and theory. I discussed works on the feminist STS field that examines how power relations based on gender are conveyed through technological production. In accordance with these studies, I presented studies gendering of the products and designers' configuration of the users by

designers and hierarchies established with these processes. Although there are some sources in the industrial design literature probe gender relations via toy design, there is no detailed inquiry on how material practices in different design fields reproduce, deconstruct gender.

In the next chapter, I justified the feminist methodology that I adopted for this study. After I explained my research approach, which corresponds with the research topic, aims, and questions, I moved on to data collection methods. The sampling of the designers and community members/parents whom I interviewed is examined thoroughly regarding designers' backgrounds and their relations with social design, wooden toy design, and commercial design fields, followed by the interview process. Before I continue to the data analysis process and methods, I briefly clarified why and how I incorporated the online data into my research.

The next chapter presents the analysis of the data collected through semi-structured interviews with three designers as a primary source which is accompanied by secondary sources as semi-structured interviews with the community members/parents and online data from companies' social media channels and websites. The analysis chapter composes a comparison and discussion of the collected data with the prior studies on design and gender relationships as well as the gender theories.

Lastly, in this section, I summarized the whole process, and in the following section, I will demonstrate prominent conclusions of my research.

5.2 Main Conclusions

The main conclusions of the study are organized into three sections. In the first part, I discuss how the binary system intervenes the design process with binary clusters and binarized materialities, which operate as a reproduction mechanism. Then, I present conclusions on different possibilities of the use of binaries. In the third part,

I address the last conclusion as community relationships of the designer as a deconstructive and reconstructive approach.

5.2.1 Binary Gender System and Temporary Fixations of Designers/Products

This study has shown the materialization of gender norms in the design process based on the concept of binary clusters. It explains the gender reproduction mechanisms with negotiations between products and designers and also reveals the mobility of gendered concepts among these clusters with respect to socio-material organizations.

I draw on Rommes' (2011) adaption of gender script, which relies on Sandra Harding's (1986) triadic approach. Gender script revealed implicit and explicit binary gender materializations that emerge in symbolic, structural, and identity levels by way of design (Rommes, 2014; Rommes et al., 1999, 2011). Descriptions like fluid/chamfered, floral(ornamental)/technical(functional), nurture/adventure, fragile/strong, passive/active, cooking/tinkering, mother/soldier or even Barbie/Action Mann signify materialization and re-materialization of gender in symbolic, identity and structural dimensions.

These binaries stem from social and material organizations and also feed them, so products, forms, characteristics, manners, activities are considered either feminine or masculine, as dichotomies in a linear gender system. Designers as part of these organizations assign activities to binary genders by materializing *gendered characteristics* in form and use scenarios with keywords that they use. I conceptualized this as binary clusters. Binary clusters work through sedimentation of binary norms on bodies and materialities as one of the many ways that naturalization operates (Butler, 1990/2011, p.178). Meaning that part of the designers' work that builds and rebuilds momentary connections between bodies, objects, activities, and forms entrains this sedimentation process by configuring

gendered users and products in symbolic, identity and structural dimensions (see 4.2.1).

My research reveals that even if designers are part of the mechanisms that materialize gender, some product categories already have symbolic meanings which establish hegemonic forms of masculinity and femininity. This also accords with Ehrnberger et al. (2012) and H. Kaygan et al.'s (2019) discussions on the gendering of the product categories. These studies suggest that some product categories can be inherently gendered (Ehrnberger et al., 2012), and some others harbor an array of femininities and masculinities, including the hegemonic type of masculinity (H. Kaygan et al., 2019). In the case of toys, product categories like stroller, dollhouse, construction-themed, or cooking-themed toys are considered gendered because of the sediments they accumulate. At this point, I should state that, although when it comes to gendered products, the first thing that comes to mind is their colors and forms, all of these product categories that are claimed *feminine* or *masculine* have gender script on the structural dimension if not on the symbolic or identity dimension. I believe unfolding Harding's (1986) original idea of structures may offer a better explanation for this phenomenon. Even if she refers to simply a division of labor by gender, behind this institutional or institutionalized to be gender structures consolidate this division of labor (Harding, 1986, p. 18). Therefore, analysis of the interviews is parallel with previous findings and adds a new perspective. Because of entrenched relationships, products/product groups that are connected to institutionalized normative femininities and masculinities like family or military are not just temporarily fixed in their binary clusters but also perpetuate hegemonic-material performance of both femininity and masculinity (see 4.2.2 and 4.3.2 for the military-themed game, see 4.2.2 and 4.3.1 for the stroller).

Sedimentations in binary categories define the *nature of the product*. While this *nature* defines materialized gender performance, re-materialization practices strengthen their fixations in the binary clusters and assemble a body of gendered materialities and material practices that reproduce themselves. This defines designers' negotiations among binary clusters, yet also limits designers to gendered

materialization in the pre-design process. Moreover, while designers are finding ways by material encounters, trying different material practices, users, and product ranges, gendered materialities are reproduced in the meta-design process by the inevitable materialization of normativity (Denz & Eggink, 2019), re-materializations and osmosis of gender-neutral practices by dominant gendered ones since binaries as underlying and *natural* logic emerge (see 4.3.1). Therefore, binaries become sieves that reproduce gendered materialities, yet just not for each individual product but also for internal organizations of the firms. Product ranges that build on two binary opposites and gender-neutral at the middle reveal gender's conceptualization as linear from *feminine* to *masculine* poles instead of multiple spectrums. Finding a way as a gender reproduction mechanism refers to negotiating between *two opposites* in socio-material entanglements yet the term encapsulates confinements within clusters.

On the other hand, commitment to binary clusters relates to intentionality when designers lean on stereotypes instead of material encounters. There is an interesting pattern in the interviews that unfolds the transformation of old conventional ways of doing in toy design, representations on the packages, to new ones which maintain gender relations. While nostalgia is instrumentalized for the materialization of hegemonic masculinity with the 'from father to son' scenario, sexist, even colonialist representations of women on the old game packages perpetuate masculinity in the new ones with "aggressive, chamfered" forms of the products and re-materialization. This change from explicit to subtle, more symbolic execution of hierarchies shows how toy design sustains its patriarchal values through the medium of design (see 4.3.2). Especially the commercial design practice necessitates intentional use of binaries and knowledge of the material performance of binary gender, which involves activities, keywords, forms, users, and normative connections between them, and this knowledge is considered as an asset. Therefore, while designers' manipulation of binary clusters reproduces gendered materialities, it also embeds products with binary clusters. This temporal fixation, in effect, feeds back to the design process as designers lean on stereotypes.

5.2.2 Mobility among and outside of Clusters

Based on the analysis, my study also provided valuable insights on different layers and dimensions of crossing binaries as a material practice by which gendered materialities are both reproduced and deconstructed. Accordingly, the mobility provided by crossing in clusters and ambiguity emerged as a deconstructive approach.

As the literature review puts it, crossing or exchanging binary traits is not a new practice. At the same time, previous scholars in previous studies adopt this approach mostly with a drive of either reaching inclusivity or deconstruction of gendered approaches in design. Stienstra (2003) develops gender cross over approach which grounds on essentialist theories that revolve around the motor-cognitive difference of boys and girls yet The study aims to offer a design framework for more gender-inclusive toys by merging the preferences of boys and girls without signifying any gender. Similar but in a slightly different way, designers cross binaries in symbolic, identity and structural dimensions, use binary gendered traits together not exactly for inclusivity rather reaching gender-neutrality. To explain better, even if designers want to reach gender-neutrality, if the product category is temporarily fixed in its binary clusters, *masculine* or *feminine characteristics* only happen to be trimmed. In this vein, crossing can be practiced in order to rasp masculine or feminine assigned characteristics of the products for the production of gendered materialities. This type of crossing corporates with the “for her” approach of van Oost (2003) and Ehrnberger (2012), who offer extensive analysis of feminine pinked and shrank versions of masculine considered technologies and their hierarchical relationships. Even if sometimes crossing this approach claims to deconstruct gender norms since the practice is still confined in the clusters and, more importantly, it mainly relies on re-materialization on the symbolic dimension, any attempt to break binary clusters only rebounds and reproduces stereotypes back (see Nerf example 4.3.2). These two approaches of crossing offer designers limited mobility among binaries that stems from cultural/symbolic affordance of products and temporary fixations of designers.

As I mentioned in the previous part, designers may cross binary traits in symbolic, identity, and structural dimensions in a way that deconstructs gendered materialities. My research demonstrated that some product categories that have open-ended scenarios like constructive toys offer multiple usages and, in this way, functionally afford deconstructive approaches and allow designers to perform mobility outside of binary clusters. Assigning feminine characteristics to masculine assigned pieces does not cause ‘for her’ approach or temporary fixation because of pieces’ multiple uses in the play scenario, even deconstruct these characteristics with repetition of multiple temporary relations. This crossing practice also correlates with an ambiguity approach that avoids all gender signifiers and binary clusters in the design process, chases undefined forms to define its own script. This new script goes beyond dualities, weaves new relations that are defined by multiplicity rather than a dichotomous one.

However, my analysis also revealed that crossing is practiced by designers in a more complex way within different socio-material and socio-technical entanglements. For the temporarily fixed gendered materialities like kitchen or stroller, while cultural/symbolic affordance limits designers’ mobility, other crossings and new relations that build in socio-material and socio-technical organizations may deconstruct gender norms in the meta-design process. Designers’ expanded binary logic, which contains plastic/wood, colorful/simple, artificial/natural, draws a framework for the wooden toys category, so, within this socio-material entanglements, the material itself affords designers gender-neutrality. This also converges with the reconfiguration of user and persistent product categorization in the post-design process as unisex reconstructs gendered materiality by rebuilding new multiple relations like ambiguity, but this time discourse, message operate as a deconstructive mechanism.

5.2.3 Community Relations of Designers and Re-constructing Gendered Materialities

The research also concludes that material participation operates as a deconstruction mechanism in the pre- on- and post-design process. The multidimensional deconstructive approach includes communities, users, and other actors to design processes to create publics around an issue; gender inequalities stem from toys for the toy design, transforms users, and reconstruct gender with ambiguity ergo multiplicity.

Analysis of the interviews and online content allowed me to highlight the materiality of the user designer relationships from a different perspective. Designers' contact with the users that is not confined to the user test or research continues through all meta-design process reflects the nature of co-construction of all actors. Marres and Lezaun's (2011) conceptualization of material publics emphasizes material-mediated relationships in socio-material and socio-technical organizations while underlining co-articulation of materialities and participation (Marres, 2015). When the gender norms and underlying binary logic are also amalgamated with this co-articulation, gendered materialities are reproduced through material participation in the form of collaborations with communities (see 4.3.1). In a reverse situation, publics related to gender-neutral realms shape designers and deconstructs gendered materialities (see 4.4.2). On the other hand, my analysis revealed that building communities or working with them instead of collaborations is comprises multi-layered deconstructive socio-material practices that revolve around an issue; gender inequalities grow out of toy design. These practices take social design's approach of creating impact through design and products yet shift product's centrality in this process in order to avoid *quick fixes to the complex problems* or performativity of commodity activism (Repo, 2020). While Marres's (2015) material-mediated publics that gathered through an object that carries the message for issue resonate with this, yet this time designer, as an actor who is closely involved in the problematic side of the issue, mediates this socio-material encounter along with the

objects and becomes an active agent of the change. Designer's role as mediator and led by communities (Constanza-Chock, 2020) shapes the open-ended design design practice which works as deconstructive approach. Ergo, designer and product both convey the message, equal inclusive play, via both materialities and discourses message rather than binary logic intervenes meta-design process over material participation in which communities and designers reconstructed together.

Reconstruction of communities is one dimension of this deconstruction mechanism, yet all other dimensions are including this one that directs multiplicity as an approach instead of binary as my interviews rendered. Undefined forms, users by adopting ambiguity as a product script, deconstructive crossing which uses binaries but the open-ended multiple-use scenario, and most importantly consciously adopting socio-material approach instead of mere material one that uses gender script adjusts approach of multiplicity.

5.3 Limitations of the Research and Recommendations for Future Research

I explored reproduction and deconstruction mechanisms of gendered materialities in different toy design practices. Within the scope of the study, I conducted semi-structured interviews with three designers who belong to different spheres of design. Even if these designers offer different practices such as social design, wooden toy design, and commercial design, the small size of the sample group limits the generalizability of the study. Notwithstanding the relatively limited sample, this work offers valuable insights into how different material practice(s) within socio-material-technical organization shapes designers and the materialization process of gender. However, material practice(s) in/of design is not confined to toy design or sub-sections of it; further research usefully explores gender roles' interventions to non-linear complex meta-design processes in other fields and subfields of design.

As I discussed earlier, gendered material production is a complex process that involves many actors such as designers, users, products, side-consumers, clients, communities, along with design culture(s) and discourses. I mainly focused on the designers' side of my research and in order to enrich data, reach a deeper understanding of these entanglements, I incorporated interviews with the community members/parents and online data I gathered from social media accounts of companies. However, since all of the actors, including gendered materialities, co-construct each other, more extensive inquiry may include other actors and reveal different reconstruction or deconstruction mechanisms. Moreover, I centered designers in this research, but since my research shed new light on how community relationships also shape designers, these relationships' effects on design culture(s) might be fruitful areas for further work.

This research also adds to the growing body of studies that indicate the materialization of the binary gender system. Conceptualization of binary clusters and designers' mobility outside of or around them can be used for further study; in line with my main aim, further studies may deploy it to cast off gender binaries and embrace multiplicity in/of the design process.

REFERENCES

- Aaltojärvi, I. (2009). *Ascribing Gender from Domestic Technologies*.
- Abbott, P. (2006). Gender. In G. Payne (Ed.), *Social Divisions* (2nd ed., pp. 65–99). PALGRAVE MACMILLAN.
- Ahmed, S. (2010). *The promise of happiness*. Duke University Press.
- Ahmed, S. (2014, November 4). *White Men*.
<https://Feministkilljoys.Com/2014/11/04/White-Men/>.
- Ahmed, S. (2017). *Living a feminist life*. Duke University Press Books.
- Akrich, M. (1992). The de-scription of technical objects. In W. Bijker & J. Law (Eds.), *Shaping technology/building society: Studies in sociotechnical change* (pp. 205–224). Cambridge, MA: MIT Press.
- Akrich, M., & Latour, B. (1992). *A summary of a convenient vocabulary for the semiotics of human and nonhuman assemblies*.
- Attfield, J. (1989). “Form/female follow function/male: Feminist Critiques of Design” in Design History and the History of Design. In J. A. Walker & J. Attfield (Eds.), *Design history and the history of design* (pp. 199–225). Pluto.
- Attfield, J. (1996). Barbie and Action Man: Adult toys for girls and boys. In P. Kirkham (Ed.), *The gendered object* (pp. 80–89). Manchester University Press Manchester.
- Berg, A.J., & Lie, M. (1995). Feminism and constructivism : Do artifacts have gender? *Science Technology and Human Values*, 20(3), 332–351.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
<https://doi.org/10.1191/1478088706qp063oa>

- Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, 18(3), 328–352. <https://doi.org/10.1080/14780887.2020.1769238>
- Buckley, C. (1986). Made in patriarchy : Toward a feminist analysis of women and design. *Design Issues*, 3(2), 3–14.
- Butler, J. (1990). *Gender trouble. Feminism and the subversion of identity*. New York: Routledge.
- Butler, J. (2011). *Bodies that matter: On the discursive limits of sex*. routledge.
- Canlı, E. (2017). *Queering design: Material re-configurations of body politics*.
- Canlı, E. (2018). Binary by Design: Unfolding Corporeal Segregation at the Intersection of Gender, Identity and Materiality. *Design Journal*, 21(5), 651–669. <https://doi.org/10.1080/14606925.2018.1491716>
- Cassell, J. (1998). Storytelling as a nexus of change in the relationship between gender and technology: A feminist approach to software design. *From Barbie to Mortal Kombat: Gender and Computer Games*, 298–326.
- Clarke, V., & Braun, V. (2019). Feminist qualitative methods and methodologies in psychology: A review and reflection. *Psychology of Women and Equalities Section Review*, 2(1), 13–28.
- Clegg, S., & Mayfield, W. (1999). Gendered by Design: How Women’s Place in Design Is Still Defined by Gender. *Design Issues*, 15(3), 3. <https://doi.org/10.2307/1511881>
- Cockburn, C. (1985). *Machinery of dominance: Women, men and technical know-how*. London; Dover, NH: Pluto Press.
- Cockburn, C. (1988). *Machinery of dominance: Women, men, and technical know-how*. Northeastern Univ Pr.

- Cockburn, C. (1997). Domestic technologies: Cinderella and the engineers. *Women's Studies International Forum*, 20(3), 361–371.
[https://doi.org/10.1016/S0277-5395\(97\)00020-4](https://doi.org/10.1016/S0277-5395(97)00020-4)
- Cockburn, C., & First-Dilić, R. (1994). *Bringing technology home: Gender and technology in a changing Europe*. Open University Press Buckingham.
- Cockburn, C., & Ormrod, S. (1993). *Gender and technology in the making*. SAGE Publications Ltd.
- Connell, R. W. (1987). Gender and power. *Society, The Person and Sexual Politics*, California.
- Connell, R. W. (2002). Gender: Short introductions. *Cambridge: Polity*.
- Cowan, R. S. (1983). *More work for mother*. Basic Books.
- de Beauvoir, S. (2010). *The second sex*. Knopf.
- Delphy, C. (1984). For a materialist feminism. *Feminist Theory: From Margin to Center*.
- Denz, S., & Eggink, W. (2019). *Queer-Sensible designing: Challenging normative gender through an industrial design practice*.
<https://www.researchgate.net/publication/334084026>
- Derrida, J. (1998). *Of grammatology*. Johns Hopkins University Press.
- Dockterman, E. (2019, September 25). “A Doll For Everyone”: Meet Mattel’s Gender-Neutral Doll. <https://Time.Com/5684822/Mattel-Gender-Neutral-Doll/>.
- Ehrnberger, K., Räsänen, M., & Ilstedt, S. (2012). Visualising gender norms in design: Meet the Mega Hurricane Mixer and the Drill Dolphia. *International Journal of Design*, 6(3).
<http://www.ijdesign.org/index.php/IJDesign/article/view/1070>

- Faulkner, W. (2000a). Dualisms, hierarchies and gender in engineering. *Social Studies of Science*, 30(5), 759–792.
<https://doi.org/10.1177/030631200030005005>
- Faulkner, W. (2000b). The power and the pleasure? A research agenda for “making gender stick” to engineers. *Science Technology and Human Values*, 25(1), 87–119. <https://doi.org/10.1177/016224390002500104>
- Gannon, S. A., & Davees, B. (2007). Postmodern, poststructural, and critical theories. In S. N. Hesse-Biber (Ed.), *Handbook of feminist research : Theory and praxis* (pp. 71–106). Sage Publications.
- Goffman, E. (1979). *Gender advertisements*. Macmillan International Higher Education.
- Gorman, C. R. (2001). Reshaping and rethinking: Recent feminist scholarship on design and designers. *Design Issues*, 17(4), 72–88.
<https://doi.org/10.1162/07479360152681100>
- Greenbaum, J. (1991). *Toward participatory design: The head and the heart revisited*. Aarhus University, Computer Science Department.
- Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies*, 14(3), 575–599.
- Harding, S. G. (1986). *The science question in feminism*. Cornell University Press.
- Hesse-Biber, S. N. (2010). *Mixed methods research: Merging theory with practice*. The Guilford Pres.
- Hesse-Biber, S. N., & Leavy, P. (2007). *Feminist research practice : A primer*. Sage Publication.
- Hesse-Biber, S. N., & Leavy, P. (2011). *The practice of social research*. Los Angeles, CA: Sage.

- Hines, S. (2020). Sexing gender; gendering sex: Towards an intersectional analysis of transgender. In V. Robinson & D. Richardson (Eds.), *Introducing Gender and Women's Studies* (pp. 140–162). Macmillan International Higher Education.
- Hirsch, E., & Silverstone, R. (2003). *Consuming technologies: Media and information in domestic spaces*. Routledge.
- Holmes, M. (2007). *What is Gender? Sociological Approaches*. SAGE Publications Ltd. <https://doi.org/10.5040/9781350005600.ch-001>
- hooks, bell. (1994). Teaching to Transgress: Education as the Practice of Freedom. In *The critical pedagogy reader*.
- Kara, K. (2018). *Gender-related categorizations of preschool children: A study on design features*.
- Kaygan, H., Kaygan, P., & Demir, Ö. (2019). A pen that ‘looks like a CEO in a business suit’: Gendering the fountain pen. *Journal of Gender Studies*, 28(1), 86–96. <https://doi.org/10.1080/09589236.2017.1409105>
- Kaygan, P. (2014). “Arty” versus “real” work: Gendered relations between industrial designers and engineers in interdisciplinary work settings. *Design Journal*, 17(1), 73–90. <https://doi.org/10.2752/175630614X13787503069990>
- Kaygan, P. (2016). Gender, technology, and the designer’s work: A feminist review. *Design and Culture*, 8(2), 235–252. <https://doi.org/10.1080/17547075.2016.1172862>
- Kimmel, M. (2001). Global masculinities: Restoration and resistance. *A Man's World*, 21–37.
- Kirkham, P. (1996). *The gendered object*. Manchester University Press.
- Leavy, P., & Harris, A. M. (2019). *Contemporary feminist research from theory to practice*. The Guilford Press.

- Lego. (2021, October 11). *Lego ready for girls campaign*.
<https://www.lego.com/en-us/about-us/news/2021/September/Lego-Ready-for-Girls-Campaign>.
- Lie, M., & Sørensen, K. H. (1996). *Making technology our own?: Domesticating technology into everyday life*. Scandinavian University Press North America.
- MacKenzie, D., & Wajcman, J. (1999). *The social shaping of technology*. Open university press.
- Marres, N. (2005). *No Issue, No Public: Democratic Deficits after the Displacement of Politics*.
- Marres, N. (2012a). On Some Uses and Abuses of Topology in the Social Analysis of Technology (Or the Problem with Smart Meters). *Theory, Culture & Society*, 29(5), 288–310. <https://doi.org/10.1177/0263276412454460>
- Marres, N. (2012b). On Some Uses and Abuses of Topology in the Social Analysis of Technology (Or the Problem with Smart Meters). *Theory, Culture & Society*, 29(5), 288–310. <https://doi.org/10.1177/0263276412454460>
- Marres, N. (2015). *Material participation: Technology, the environment and everyday publics*.
- Marres, N., & Lezaun, J. (2011). Materials and devices of the public: An introduction. *Economy and Society*, 40(4), 489–509.
<https://doi.org/10.1080/03085147.2011.602293>
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A Guide to Design and Implementation (2015, Jossey-Bass) - libgen.lc* (4th Edition). John Wiley & Sons.
- Morgan, D. H. J. (1992). *Discovering men* (Vol. 3). Taylor & Francis.
- Mulvey, L. (1998). Male gaze. *Visual and Other Pleasures*.
- Norman, D. A. (2013). *The design of everyday things*. Basic Books.

- Oakley, A. (1972). *Sex, Gender and Society*. Hampshire: Arena Gower Publishing.
- Oldenziel, R. (1999). *Making technology masculine: Men, women and modern machines in America, 1870-1945*. Amsterdam University Press.
- Oudshoorn, N., & Pinch, T. (2003). Introduction: How users and non-users matter. *How Users Matter. The Co-Construction of Users and Technology*, 1–25.
- Oudshoorn, N., Rommes, E., & Stienstra, M. (2004). Configuring the user as everybody: Gender and design cultures in information and communication technologies. *Science Technology and Human Values*, 29(1), 30–63.
<https://doi.org/10.1177/0162243903259190>
- Oudshoorn, N., Saetnan, A. R., & Lie, M. (2002). On gender and things: Reflections on an exhibition on gendered artifacts. *Women's Studies International Forum*, 25(4), 471–483. [https://doi.org/10.1016/S0277-5395\(02\)00284-4](https://doi.org/10.1016/S0277-5395(02)00284-4)
- Patton, M. Q. (2015). *Qualitative research & evaluation methods [Kindle version]*. Thousand Oaks, CA: Sage. Retrieved from Amazon. com.
- Ramazanoğlu, C., & Holland, J. (2002). *Feminist methodology: Challenges and choices*.
- Repo, J. (2015). *The biopolitics of gender*. Oxford University Press.
- Repo, J. (2020). Feminist Commodity Activism: The New Political Economy of Feminist Protest. *International Political Sociology*, 14(2), 215–232.
<https://doi.org/10.1093/ips/olz033>
- Richardson, D. (2015). Conceptualising gender. In V. Robinson & D. Richardson (Eds.), *Introducing Gender and Women's Studies* (Vol. 4). Macmillan International Higher Education.
- Richardson, S. (2015). *Gender Lessons: Patriarchy, Sextyping & Schools*. Sense Publishers.

- Rommes, E. (2014). Feminist Interventions in the Design Process. In *Gender in Science and Technology* (pp. 41–55).
- Rommes, E., Bos, M., & Geerdink, J. O. (2011). Design and use of gender specific and gender stereotypical toys. *International Journal of Gender, Science and Technology*, 3(1), 185–204.
- Rommes, E., Oost, E. van, & Oudshoorn, N. (1999). Gender in the design of the digital city of Amsterdam. *Information, Communication & Society*, 2(4), 476–495. <https://doi.org/10.1080/136911899359510>
- Saldaña, J. (2009). *The coding manual for qualitative researchers*. Sage Publications.
- Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. Teachers college press.
- Serano, J. (2013). *Excluded: Making feminist and queer movements more inclusive*. Seal Press.
- Sørensen, K. H., Aune, M., & Hatling, M. (2000). Against linearity: On the cultural appropriation of science and technology. In M. Dierkes & von G. Claudia (Eds.), *Between understanding and trust: The public, science and technology*. Harwood.
- Sparke, P. (1995). *As long as it's pink: The sexual politics of taste*. Pandora.
- Stienstra, M. (2003). Is Every Kid Having Fun. In *A Gender Approach to Interactive Toy Design (Ph. D. thesis, Twente University, Enschede, The Netherlands, 2003)*.
- Sullivan, N. (2003). *A critical introduction to queer theory*. New York University Press.
- Teodorczuk, T. (2017, June 21). *Hasbro eliminates gender for toys*. <https://www.kwch.com/content/news/Hasbro--429969953.html>.

- Turner, P., & Turner, S. (2011). Is stereotyping inevitable when designing with personas? *Design Studies*, 32(1), 30–44.
<https://doi.org/10.1016/j.destud.2010.06.002>
- van Oost, E. (2003). Materialized gender: How shavers configure the users' femininity and masculinity. In N. Lerman, R. Oldenziel, & A. P. Mohun (Eds.), *How users matter. The co-construction of users and technology* (pp. 193–208). MIT Press.
- Wajcman, J. (1991). *Feminism confronts technology*. Polity Press.
- Wajcman, J. (2009). Feminist theories of technology. *Cambridge Journal of Economics*, 34(1), 143–152. <https://doi.org/10.1093/cje/ben057>
- West, C., & Zimmerman, D. H. (1987). Doing gender. *Gender & Society*, 1(2), 125–151.
- Wilshire, D. (1989). The uses of myth, image, and the female body in re-visioning knowledge. In S. Bordo & A. M. Jaggar (Eds.), *Gender/Body/Knowledge: Feminist Reconstructions of Being and Knowing* (pp. 92–114). Rutgers University Press.
- Wittig, M. (1992). *The straight mind and other essays*. Beacon Press.

APPENDICES

A. PILOT INTERVIEW QUESTIONS (TURKISH)

DENEYİMLER

Geçmiş Deneyimler

- Biraz mesleki geçmişinizden bahseder misiniz?
- Daha önce nerelerde çalıştınız?
- Ne gibi ürünler tasarladınız? (Ürün grupları, ürünler...)
- Hangi kullanıcı gruplarıyla çalıştınız?
- Hangi firmalarla çalıştınız?

Güncel Deneyimler

- Şu anda ne gibi şeylerle uğraşıyorsunuz?
- Ne tür ürünler tasarlıyorsunuz?
- Hangi kullanıcı grupları için tasarlıyorsunuz?
- Hangi firmalarla çalışıyorsunuz?
- Hangi firmalarla çalışıyorsunuz?

TASARIM SÜRECİ ÜZERİNE

Tasarım sürecinizi anlatabilir misiniz?

- Nasıl başlıyorsunuz?

Tasarım İş Tanımı

Firmadan gelen tasarım iş tanımı, kendi tasarım iş tanımını belirleme, konsept geliştirme vs.

Kendi belirliyorsa:

- İş tanımı yazma sürecinize kimler dahil oluyor? (İş arkadaşı, çeşitli pazarlama şirketleri vs.)
- İş tanımı yazarken ne gibi kriterleriniz var?
 - Kullanıcı grubu belirleme, ürün kriterlerini belirleme, tasarım problem belirleme...
 - Kullanıcıya dair kriterler, ürünün kullanılacağı alana dair kriterler
 - Kullanıcının ürünle etkileşimine dair ve kullanıma dahil olacak diğer aktörlere dair
- Kullanıcıya dair ne gibi kararlar alıyorsunuz bu süreçte? (Yaş, cinsiyet, alışkanlıklar vs.)
- Yazdığınız iş tanımlarından memnun oluyor musunuz?
 - Tasarım sürecinizde dönüp tasarım iş tanımınızda değişiklikler yapıyor musunuz?
 - Yapıyorsanız ne gibi değişiklikler yapıyorsunuz?
- Kriterlerden öte kısıtlarınız var mı? Varsa ne gibi kısıtlar?
- Kısıtlarınızı esnetme ya da imkânınız olsaydı hangi kullanıcı grupları için ne gibi ürünler tasarladınız?

Şirketten geliyorsa:

- İş tanımı yazma süreçlerine kimler dahil oluyor? (İş arkadaşı, çeşitli pazarlama şirketleri, şirket çalışanları vs.)
- Yazdığınız/aldığınız iş tanımlarında memnun kalıyor musunuz?
 - Tasarım iş tanımı aldıktan-yazdıktan sonra üzerinde değişiklik yapma imkânınız oluyor mu?
 - Oluyorsa nasıl değişiklikler yapıyorsunuz? (Kullanıcı grubu, kriterler vs.)

- Tasarım sürecinizde yazdığınız iş tanımlarında değişiklikler yapıyor musunuz? Ne gibi değişiklikler yapıyorsunuz?
- Yazdığınız/aldığınız iş tanımlarında gözünüze çarpan kriterler neler?
- Yazdığınız/aldığınız iş tanımlarında kısıt olarak Gördüğünüz şeyler var mı? Varsa neler? (Özellikle kullanıcı grubunda, kullanım bağlamında vs.)
- Kendi yazma imkânınız olsa ne gibi kriterler belirlerdiniz? (Özellikle kullanıcı grubunda, kullanım bağlamında vs.)
- Kısıtlarınızı esnetme ya da imkânınız olsaydı hangi kullanıcı grupları için ne gibi ürünler tasarlardınız?

Konsept geliştirme:

- Konsept geliştirme süreçlerinde kimlerle birlikte çalışıyorsunuz?
- Konsept geliştirirken ne gibi yöntemler kullanıyorsunuz? (Persona, mindmap...)
- Bu süreçte kullanıcıyla bir araya geliyor musunuz? Nasıl?
- Konsept geliştirme sürecinde ne gibi tasarım kararları alıyorsunuz?
 - Ürünün özellikleri?
 - Kullanıcının ürünle etkileşimi
 - Ürünün çevreyle ile ilişkisi
 - Kullanıcının ürün kullanımına dahil olan diğer aktörlerle ilişkisi?
- Tasarım kararları almak için ne gibi yöntemler-araçlar kullanıyorsunuz?
- Tasarım kararlarını kimlerle birlikte alıyorsunuz? (Hiyerarşi?)
- Bu aşamada tasarım kararı alırken kriterleriniz neler?
- Geliştirdiğiniz konseptler üzerinden ürün geliştirme aşamasında ne gibi tasarım
- Bu süreçte kullanıcıyla bir araya geliyor musunuz? Geliyorsanız biraz anlatır mısınız?

Kullanıcı testi:

- Tasarladığınız ürünün belirlediğiniz kullanıcıya ulaşp ulaşmadığını anlamak için ne gibi araçlar ve yöntemleriniz var?
- Bu araçlar ve yöntemler tasarladığınız ürünü nasıl etkiliyor?
- Bu araçlar ve yöntemler tasarladığınız ürünün kullanıcıyla olan ilişkisini nasıl etkiliyor?
- Kullanıcı testi ise
 - Test için katılımcı kriterlerini nasıl belirliyorsunuz?
 - Tasarım yaklaşımınız bu kriterleri nasıl etkiliyor?

ÜRÜN ÜZERİNE

- Ürünlerinizin kullanım bağlamını düşündüğünüzde ne gibi senaryolar canlandırıyorsunuz? Tarif edebilir misiniz? (Mekân, etkileşim, diğer aktörler vs.)
- . Ürünlerinizin kullanan kullanıcıları tarif edebilir misiniz?
 - Ürünlerinizin hangi kullanıcıların erişimi var? (Sosyal, ekonomik, cinsiyet vs.)
 - Ürünleriniz kullanımı belirli fiziksel ya da zihinsel beceriler gerektiriyor mu?
- Ürünlerinizin kullanıcının hayatı üzerinde nasıl bir etkisi olduğunu düşünüyorsunuz?
- Ürünlerinizin kullanıcıların hayatını değiştirmeyi/dönüştürmeyi düşünür müsünüz? Nasıl?
- Kısıtlarınız olmasaydı (ekonomik vs.) kimler için ve nasıl ürünler tasarlamak isterdiniz?

- Ürünler tasarlarırken kullandığınız yöntemlerden hangileri sizce bu - kısıtlarınız olmadan- tasarladığınız ürünlere daha uygun?

TASARIMCI ÜZERİNE

- Bireysel olarak kullanıcıyı anlamak için ne gibi yöntemler kullanıyorsunuz?
- Günlük hayatınızdaki deneyimlerinizin ürünlerinize yansıdığını düşünüyor musunuz? Nasıl?
- Kendiniz tasarımcı olarak tasarladığınız ürünleri nasıl etkiliyorsunuz?
 - Tasarımcı olarak bakış açısı nedir?
 - Tasarladığı ürünlere bu bakış açınız nasıl yansıtıyor?
- Hangi yöntemler/araçların sizin tasarım algınıza daha uygun olduğunu düşünüyorsunuz?
- Günlük hayatınızdaki deneyimlerinizi ürünleri tasarlarırken kullanıyor musunuz? Nasıl?
- Cinsiyetinizin (deneyimleriniz açısından) tasarladığınız ürünleri etkilediğini düşünüyor musunuz? Neden? Nasıl?
- Cinsiyetinizin kullanıcıya karşı bakış açınızı etkilediğini düşünüyor musunuz? Neden? Nasıl?

B. THE DESIGN CONSULTANT PRODUCT BASED INTERVIEW GUIDE (TURKISH)

Çalışma aslında tasarımcının çevresiyle ilişkisi, bunu ürünlerine nasıl yansıttığı ve kullanıcının nasıl yorumladığı. Önce genel bir giriş yapacağım daha sonra ürünleriniz hakkında konuşacağız. Sizinle ekran paylaşacağım annotate özelliğini kullanarak ürünün üzerinde göstermek istediğiniz yerleri belirtebilirsiniz.

Ürünün hikayesi ne anlatabilir misiniz?

TASARIM İŞ TANIMI

- Size nasıl bir brief geldi?
 - Sizden ne isteniyordu?
 - Ürünü nasıl tanımlamışlardı?
 - Ürünün nasıl bir kullanım senaryosu vardı?
 - Ürün hangi kullanıcı grubuna ulaşmayı amaçlıyordu?
 - Bu kullanıcı grubunu nasıl tanımlamışlardı?
 - Ürünün kullanım senaryosuyla kullanıcı grubu arasında nasıl bir bağ vardı?
- İş tanımında değişiklik yaptınız mı hiç?
- Firmanın ürüne dair direkt talep ettiği şeyler var mıydı forma, renge dair?
- Siz gelen iş tanımını nasıl yorumladınız?
 - Bu forma nasıl karar verdiniz?
 - İş tanımını nasıl ürüne yansıttınız?
 - Alternatifleri nasıl tasarladınız?
- Ürün kullanıcıyı nasıl yansıtıyor?
- Favoriniz olan alternatif var mıydı? Neden?

- Sizce iş tanımına ve kullanıcıya en uygun olan alternatif hangisiydi?
Neden?
- Alternatifler arasından seçim nasıl oldu?
 - Fimaya bütün alternatifleri sundunuz mu?
 - Sunmadıysanız neye göre bir seçim yaptınız?
 - Ne gibi yorumlar yaptılar?
 - Sizce neden firma o ürünü seçti?

C. THE WOODEN TOY DESIGNER PRODUCT BASED INTERVIEW GUIDE (TURKISH)

Çalışma aslında tasarımcının çevresiyle ilişkisi, bunu ürünlerine nasıl yansıttığı ve kullanıcının nasıl yorumladığı. Önce genel bir giriş yapacağım daha sonra ürünleriniz hakkında konuşacağız. Sizinle ekran paylaşacağım annotate özelliğini kullanarak ürünün üzerinde göstermek istediğiniz yerleri belirtebilirsiniz.

- Oyuncak tasarlama hikayeniz nasıl başladı?
- Daha önce ne gibi işler yaptınız?
- Şirkette kaç kimlerle çalışıyorsunuz?
- Ürün gruplarınızdan bahseder misiniz biraz? Ürünlerinizi nasıl sınıflandırıyorsunuz?

TASARIM SÜRECİ ÜZERİNE

[BÜTÜN ÜRÜNLER İÇİN]

- Ürünün hikayesi ne? Anlatabilir misiniz?
 - Ürünün adı nereden geliyor?
 - Ürünü tasarlamaya nasıl karar verdiniz?
- Ürünün formuna nasıl karar verdiniz?
- Ürün kimlere ulaşmayı amaçlıyordu? Neden bu kullanıcı grubu?
 - Bu ürüne/formuna nasıl yansıdı?
 - Ürün tasarımında neler yaptınız bu kullanıcı grubu için?
- Kullanıcıyla bir araya geldiniz mi hiç? Biraz bahseder misiniz?
 - Nelere dikkat ettiniz?
 - Kullanıcıya nasıl ulaştınız?
 - Kimlerle denediniz ürünü?

- Yaş grubu, cinsiyet konusunda bir tercihiniz var mıydı? Neden?
- Ne gibi tepkiler aldınız?
- Ürün üzerinde değişiklikler yaptınız mı? Yaptıysanız ne gibi değişiklikler yaptınız?

TOPLULUK İLİŞKİLERİ

- Kullanıcıyla başka ne şekillerde bir araya geldiniz? (Fuarlarda, anne buluşmalarında vs.)
 - Ne gibi tepkiler aldınız?
 - Bu sizin ürününüzü nasıl etkiledi?
- Ürünlerinize dair kullanıcılardan geri bildirimler aldınız mı? Aldıysanız nasıl bildirimlerdi bunlar?
 - Ürün kullanımı
 - Renk
 - Başka ürünlerin tasarımı
 - Ürünü çeşitlendirme

ÜRÜNLERİN ETKİSİ

- Günlük hayatınızdaki deneyimlerinizi ürünleri tasarlarken kullanıyor musunuz? Nasıl?
- Ürünlerinizin kullanıcının hayatı üzerinde nasıl bir etkisi olduğunu düşünüyorsunuz?

D. THE SOCIAL DESIGNER COMMUNITY RELATIONS INTERVIEW GUIDE (TURKISH)

Çalışma aslında tasarımcının çevresiyle ilişkisi, bunu ürünlerine nasıl yansıttığı ve kullanıcının nasıl yorumladığı. Topluluk ilişkileriniz üzerine konuşacağız röportajda.

- Oyun savunuculuğunun hikayesi nasıl başladı?
 - Neden böyle bir topluluk oluşturmak istediniz?
 - İnsanlarla nasıl bir araya geldiniz? (Kimler, hangi çevreler...)
 - Oyun savunuculuğu kavramı ürün tasarımınızı etkiliyor mu? Nasıl?
- Ne gibi etkinlikler düzenliyorsunuz?
 - Bu etkinlikleri neye göre düzenliyorsunuz? Programınız, hedefleriniz var mı?
 - Etkinliklerin amaçları neler?
 - Bu etkinliklerin oyuncağınızın kullanım bağlamını etkilediğini düşünüyor musunuz? Nasıl?
- Firmanızın kullanıcıya karşı bakış açısından bahseder misiniz?
 - Hangi kullanıcı grubuna ulaşmayı hedefliyorsunuz?
 - Bu kullanıcı gruplarına tasarım yapmak ürünlerinize nasıl yansıyor?
 - Bu kullanıcı gruplarına ulaşmak için ne gibi yöntemler kullanıyorsunuz?
 - Kullanıcılardan ürün hakkında geri dönüş alıyor musunuz? Nasıl?
- Blog postlarınızda ve instagram postlarınızdaki mesajlarınız ne zaman dahil oldu? Neden?
 - Ürününüzün tasarımının bu mesajlardan etkilendiğini düşünüyor musunuz? Neden? Nasıl?
 - Ürününüzün kullanım bağlamının bu mesajlardan etkilendiğini düşünüyor musunuz? Neden? Nasıl?
 - Ürününüzün mesajlardan etkilendiğini ya da yerleştirdiğini düşünüyor musunuz? Nasıl? Neden?

- Ürünü sizin kullanıcıya sunmadan önceki kullanım senaryonuzla ürün kullanıcıyla buluştuktan sonra onların kullanım senaryoları arasında farklar var mı? Varsa neler biraz açabilir misiniz?
 - Ürünün cinsiyetlendirilmesine dair gözlemlediğiniz şeyler var mı?
 - Ürününüzün bu konuda alan sağladığı ya da kullanıcıyı yönlendirdiği yerler var mı?
 - Davranışı olumladığı ya da kırdığı durumlar oluyor mu?
- Ürünlerinizin kullanıcıyı nasıl etkilediğini düşünüyorsunuz?
 - Ürünlerinizin kullanıcıların hayatını değiştirdiğini/dönüştürdüğünü düşünüyor musunuz? Nasıl?

E. PARENTS/COMMUNITY MEMBERS INTERVIEW GUIDE (TURKISH)

Çalışma aslında tasarımcının çevresiyle ilişkisi, bunu ürünlerine nasıl yansıttığı ve kullanıcının nasıl yorumladığı. Katıldığınız topluluk ve marka ilişkileri üzerine konuşacağız.

- Biraz kendinizden bahseder misiniz?
- Çocuğunuz kaç yaşında?

OYUN

- Sizce oyun nasıl olmalı?
- Çocuğunuzla nasıl oyunlar oynuyorsunuz?
- Diğer ebeveyn çocuğunuzla oynadığınız oyunlara ne kadar dahil oluyor?
- Kendinizin ebeveyn olarak oyundaki rolünüzü nasıl görüyorsunuz?

OYUNCAK

- Çocuğunuz için nasıl oyuncaklar tercih ediyorsunuz?
- Oyuncakları kim seçiyor?
- Sizce büyüdükçe oyuncak seçimi nasıl değişiyor?

TOPLULUK

- Topluluğa katılma hikayenizi anlatabilir misiniz?
 - Neden dahil oldunuz?
 - Ebeveynliğiniz ve oyun savunuculuğu arasında nasıl bir ilişki görüyorsunuz?

- Topluluğa katılırken beklentileriniz nelerdi?
- Toplulukla hangi etkinliklere katıldınız? Neden?
- Toplulukta olmanız kendi çocuğunuzla oynadığınız oyunlara nasıl etkiliyor?

TOPLULUK FİRMA İLİŞKİLERİ

- Firma ile olan ilişkiniz nasıl başladı?
- Başka firmalarla ilişkileriniz var mı? Varsa kimler?
- Bu firmadan ya da diğer firmalardan oyun savunuculuğu topluluğunda beklentileriniz neler?
- Bu tarz ilişkilerin sektör içinde değişirici/dönüştürücü etkilerinin olduğunu düşünüyor musunuz? Nasıl?

F. INFORMED CONSENT FORM (TURKISH)

Araştırma Gönüllü Katılım Formu

Bu araştırmanın amacı nedir?

Bu araştırma Orta Doğu Teknik Üniversitesi Endüstriyel Tasarım Yüksek Lisans Programında Dr. Öğr. Üyesi Damla Tönük'ün danışmanı olduğu tez çalışması dahilinde kullanılmak üzere Arş. Gör. Bilge Koyun tarafından yürütülmektedir ve bu form sizi araştırmanın içeriği konusunda bilgilendirmek üzere size verilmiştir.

Nasıl yardımcı olabilirsiniz?

Sizinle röportaj yapacağız ve röportajdaki sorulara cevap verirken konuyla alakalı deneyimlerinizi paylaşacağınızı umuyorum. Bize vereceğiniz bilgiler tasarımcı ve tasarım süreçlerinin çevresiyle etkileşimini ve bu etkileşimin ürünler üzerindeki etkilerini toplumsal cinsiyet rolleri çerçevesinde incelememe yardım edecektir.

Sizden edindiğimiz bilgileri nasıl kullanacağız?

Bu röportaja katılım gönüllüdür ve kimliğinizle ilgili herhangi bir bilgi talep edilmeyecektir. Röportaj sırasında kayıt alınacaktır, kayıtlar üçüncü kişilerle paylaşılmayacaktır. Bütün bilgiler yukarıda sözü edilen araştırmacı tarafından değerlendirilecektir.

Tasarladığınız ürünlerin görsellerinin kullanılması halinde, kimliğinizin anlaşılabilir olmasından dolayı kayıta alınan kısımlar sizden ikinci bir onay alınarak tez ve akademik çalışmalarda kullanılacaktır. Röportajı istediğiniz zaman durdurabilirsiniz.

Araştırmaya katıldığınız ve katkı sağladığınız için teşekkür ederim. Daha fazla bilgi için iletişime geçebilirsiniz.

Bilge Koyun

Tel:

E-posta:

Bu formu okuduğumu, anladığımı ve bu araştırmaya gönüllü olarak katıldığımı kabul ediyorum.

Katılımcı

İsim Soyisim

İmza

Tarih

Araştırmacı

İsim Soyisim

İmza

Tarih

G. INFORMED CONSENT FORM (ENGLISH)

INFORMED CONSENT FORM

What is the purpose of this research?

This research was conducted by Bilge Koyun within the scope of the thesis supervised by Assist. Prof. Damla Tönük in Middle East Technical University Industrial Design Master's Program. This form has been given to you to inform you about the content of the research.

How can you help?

I will be interviewing you and I hope you will share your relevant experiences while answering the questions in the interview. The information you give us will help me to examine the interaction of the designer and the design processes with their environment and the effects of this interaction on the products within the framework of gender roles.

How will we use the information we get from you?

Participation in this interview is voluntary and no information about your identity will be requested. Records will be taken during the interview, and the recordings will not be shared with third parties. All information will be evaluated by the researcher mentioned above.

If the images of the products you have designed are used, the parts quoted in the recording will be used in the thesis and academic studies after a second approval from you, since your identity can be understood. You can stop the interview at any time.

Thank you for participating and contributing to the research. You can contact us for more information.

Bilge Koyun

Phone:

E-mail:

I acknowledge that I have read, understood, and voluntarily participated in this research.

Participant

| Name Surname | Signature | Date |
|--------------|-----------|------|
|--------------|-----------|------|

Researcher

| Name Surname | Signature | Date |
|--------------|-----------|------|
|--------------|-----------|------|

H. QUOTATIONS FROM INTERVIWES

[1] We have to look at it from many different angles. We have to look at the production; you have to look at the packaging; you have to look at the number of pieces used. All of these are like filters; think of them layer by layer, think like sieves.

[2] The audience you are trying to reach has a material choice, a universe you know... (...) Let say you are designing a product for a boy, a teenage boy, or a teenage girl. What is popular now, from shoes to accessories, from a mobile phone brand to glasses? What's in their universe? What TV programs do they watch? You have to look at all of them, what inspired them. You also extract a product from an amalgam of these.

[3] In the toy industry, usually [theme packs like Lego's] [are relevant to] gender discrimination, age discrimination, pink or blue, or what else. Consultants from abroad were told that as well. They were like, " build a pony with this set, a racing car with the other one or something.

[4] (...) in general, more rounded products, more bubbly products, more curvy products, fluid forms are generally more preferred in children's toys. At least, forms with such sharp chamfered electronic connotations, tools, or gadgety forms are most likely to be sought by higher age groups or boys groups.

[5] (...) we, as two different individuals, have two different talent scales, different interests. Well, in general, this area also changes [the games we play with our child]. I mean, while I can do less kitchen stuff, about things related to repairs, we sit down and disassemble, break things together, same applies [to my wife].

[6] More feminine roles are preferred [for] more nurturing, (...) more food-themed things. For example, we designed a cookie-cutter (...). It has very pink colors, fluid bubbly forms as a form.

[7] This is like there are some keywords. After all, our job, an important part of it, is like to be able to express a feeling, with form. Well, you do it by abstracting.

[8] Let me say, only forms that do not go in the wrong directions, forms that do not make false connotations (...) Let me tell you, there are certain keywords, masculine, feminine, fast, slow. What determines these? Our universe determines it! We all know the speed; we all know the form that evokes the slow.

[9] [target user of the stroller] Children who have just started to walk, who can direct, control the product, who will be more of a companion rather than a walking aid, who will take the mother as a role model. (...) Here, of course, (...) how many boys bought [this product], very little. It is a toy mostly preferred by girls... I haven't seen it used by a boy yet.

[10] What do they call it when making the [kinetic sand] story, we need to look at the activities themselves a little while examining it. Now you have two main jobs in sand or dough. You either make it or break it. That's how the process works. In general, all of the institutions and concepts related to destruction come back to haunt masculinity. So that's the activity itself.

[11] It's called [military-themed game] anyway. So how do I express that masculinity here anyway? Look, it's extremely [showing the inside of the toy] using the language of machine parts and military ammunition. Pieces like ribs are visual cues like chamfered edges and so on [showing handle].

[12] This is already the brand legacy of the [military-themed game]. The story is this; I used to play this game with my father when I was little. If I buy it, I would play it with my child too.

[13] When what we're trying to do, is just trying to create a gender-neutral object from the product, you either try to avoid both. Or if you make a move towards one, you make a move towards the other as well, so that they balance each other. You may have made a fluid form, but at least you can choose colors that are attributed to masculine as color code.

[14] In general, all of the institutions and concepts related to destruction come back to haunt masculinity. So that's the activity itself. The story goes back to masculinity, whether in construction or anything else. When that happens, it inevitably begins to become gendered due to the activity within itself. But do we reflect it on the form, we do not. As far as possible, still bubbly and so on.

[15] So, for example, a truck wheel is a very defined thing for boys. So if you make it [form of that part] a wheel and it's technical, you know the kids are going to make it a car—something he wouldn't define as a wheel. The wheel in [our toy] is a round pink candy. It's actually designed as a wheel. But because it is not that defined and has rounded lines, children can make it an eye or a nose. But actually, its function is to be a wheel.

[16] When you say girl, what is it, fragile, I don't know what it is, but after all, there is a situation called girl power. So when we say girl's toy here, we always have something in mind, whether one of the keywords walking side by side is a flowery or whatever. There is no rule that this is necessary. It can also be feminine and strong. It can be feminine and fast too. For example, when we are making these products [modular activity tracker], we are talking about activity after all. When we say activity, we're talking about speed, fluidity, and dynamism. We tried to bring this dynamism together with feminine energy as well. But this does not mean that it will be fragile or flowery. No, there is no such thing. We still tried to keep it dynamic, energetic, athletic as much as possible but approached it from a feminine perspective. (...) Similarly ...[Dance dance revolution inspired toy] you may find it masculine or

even aggressive. But the company and we found it... How to put it... It looks dynamic enough, energetic, even badass. But it also has feminine energy.

[17] At the beginning (...), you make an attempt, and as a result of this attempt, you actually try something. (...) But [all the designs] are an experiment designed in the first place; we threw a stone into the sea, into the water.

[18] [Design of their flat-pack truck toy] it was actually an experiment...when designing it, you know there are big mega trucks on Discovery Channels, even the wheels of which are 2-3 times the height of a human (...) We wanted that form, such a big truck, a powerful truck, and we wandered around those forms. Because well, we wanted it to be like a yellow construction machine.

[19]...we always made the products be tried at [Mom Community] events and stuff. There were sometimes sales or something; we listened to people's opinions, which mothers, which children, how they ride, what they want. Here comes a mother, says, make it [one of the walker] pink...

[20] ... we entered that channel once, we took the test of the colors of pink. Instead of doing a different test, we wanted to go with a registered color.

[21] You will either go on an adventure with a designer trip and have low sales numbers, or look at it as a business where you have certain responsibilities, okay, the design and the user are at the center, but as I just said, there are the realities of life.

[22] The stroller is actually designed when a friend on the team kept the topic hot, as it mattered for a long time. Let's make a stroller! Let's make a stroller! It sells a lot, it sells a lot, why don't we.

[23] This [the simple dollhouse] on the left is the first house we designed. The basic idea there is like [flat-pack truck], it should be snap-on, no prints on it this time because the prints on [flat-pack truck] have nothing to do with the products in our other toys, there is no such graphic product, you know that. Let's make it simple, let the child paint with his own imagination. But this colorless, plain form was

understood by very few people. (...) As a result of all this, we said, are we pushing it too hard?

[24] ...when you look at the overall scene, a house in a toy company, like a Barbie house, is a must, if you think commercially. Because it's a bestseller, so it's a product that has value.

[25] If you look at the old packaging of [military-themed game], there is actually sexism all over it (laughs). ... a father and son play the game. The mother listens to them while washing the dishes inside. It's very traditional, and it's like - a father-son product. It is already a product that should have a masculine language. (...) Both by language and color (...) you establish masculinity.

[26] Since we are not a very neutral design office, there is no need to us what a girl is, whether it is this or that age group. We are already in control of the situation. That's why people work with us anyway.

[27] ...until now, there was no hero or cultural product that catered to girls who were interested in that superhero fighting part. For example, the weapon Katniss Everdeen uses there is a bow and arrow. That's her specialty. So Hasbro, while releasing this Nerf series, made the version for girls in the form of a bow and arrow.

[28] Everything that provides a game-toy experience that we see on the market now also carries the gender codes of the past. (...) I didn't make or design a defined toy, thinking that such a definition should not exist. And to have such a mute, universal thing in the content of the kit. It [muteness, universality] was, for example, a limit, a criterion I set for myself. Including the colors I chose. Because the color-coding of toys, in general, affects the choice of children. Here is toys, like pink-blue etc. You know, gender codes are [transmitted] directly with colors and actually with the concept. Here [it is designed] for boys to build construction machines, something like that.

[29] In fact, [one of our] configurations of [our toy] were to take the trash and turn it into a toy. You know, all the toys currently on the market [look] excellent. For example, Barbie symbolizes the perfect female body; you need to be blonde, you got to be this size, etc. Whereas [in our toy], you are making a character out of garbage; you are making a doll out of garbage. It doesn't need to be perfect anyway. You know, I always tried to find a concept that was as undefined as possible and opposed to those definitions because it had that motivation underneath.

[30] Or if we are making hands, if we are modeling hands, it is a man's hand, not an Action Man hand or something, but such an undefined cartoon hand. It also affects the form there because there are already so many defined and stereotyped gendered things and objects that I try to stay as far away from it as possible in the toy world.

[31]...when designing the parts, namely the kit, I paid particular attention to having an undefined form. And parts like the wheel and so on I made them pink. Because unfortunately, there were things that were categorized as such as girls' toys and boys' toys. (...) And there [during the game], they look at things like [colors of the pieces]. Whether boys stop playing with that piece or not, just because it's pink. Actually, that was one of the things I tested in those encodings [while user testing]. But since what I presented to them was undefined, they didn't get too concerned about it [the color and form of the piece]. It was something that actually encouraged them to play together. Well, it was a trigger in that sense.

[32] On the other hand, when you get involved in the toy business... By the way, we didn't leave the product-oriented mindset, but there are still sexist toys in the sector, this approach from the layout of the store to its design. On the one hand, there are the products we call collectible, and there are toys and products that are made into objects of desire in the disposable business and lose their meaning after owning them. In fact, we thought why we wouldn't voice our concerns in the business, why we wouldn't here (...) why we wouldn't start a transformation here and decided to position ourselves as a toy brand among with the product...

[33] In those tests, we made such a decision because we saw that the product passed the function and that message. Of course, when we were on the market in the first

year, we also had the concern of creating a community, whether they have children or not. Seeing that we could convey the message to them [adults] as well, we positioned ourselves that way. On the other hand, it is like a normal toy brand, but on the other hand, to turn into a structure that designs for the game advocacy, the right to play, the right of the child, and designs for their needs, and on the other hand, talking to the sector.

[34] ...there were many people saying that this [the walker] is very beautiful, is there any pink of it. Later we realized that it wasn't the right thing; it wasn't a place with the right user; it wasn't the place with the right parents. But even that is data, even realizing it, is data. Knowing the user group well, guessing what people want, making the products tested

[35] I don't attempt to convince someone to buy wooden toys instead of plastic toys. (...) [the segment we are targetting] is a segment that wants their child to grow up in better quality and healthier manner,...a segment that wants their child to use better quality and safer toys. (...) Well, it's not the economic A+ I'm talking about (...) I say A+ for those who value [their children] for those using our products. They are also questioning, that is, we have seen that mothers and fathers who do not give their children an iPad, do not necessarily make them wear pink shoes or pink t-shirts, who try to raise their children naive, and cater to the essence of the child, prefer our products.

[36] A product does not need to have 5-10 colors. It doesn't need to be 3-5 colors. It is nice for us that it is in one color, its stock is understandable, so parts are easy to obtain, so you don't have to ask if yours is pink or yellow. These are the problems we are experiencing.

[37] We pushed it in [Simple dollhouse], and it didn't work. Well, if the kitchen had not responded to the demand, if the sales performance had been low, we would have done it too; we would have turned pink. But we saw that there is no such tendency from the users; boys also bought this product a lot, we saw it from the posts. In fact, we started like that in all of them, so was my house, unisex started. But it didn't work, but the kitchen did.