

# Inclusive design in the context of performative gender through product form



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## Abstract

Inclusive design is a design approach that aims to provide equal opportunities for all individuals to use products and services. When considering gender as an aspect of inclusive design, it is important to clarify the perspective and context of gender being addressed, as the concept of gender has evolved with the emergence of feminism, gender studies, and queer theory. The concept of gender has evolved to be shaped by social context rather than determined by biological sex. Gender norms, which are tied to socially constructed categories like “men” and “women,” are shaped by performative behaviors influenced by cultural and social norms. These norms are not only related to behavior, but also to materiality, such as gendered product design and marketing. This can lead individuals to hesitate to use or purchase products that do not align with their gender identity. In this study, the aim is to examine inclusive design in the context of performative gender and support gender-equal design solutions by studying product form features using a material-semiotic methodology.

## Author keywords

Gendered product; inclusive design; performative gender

## Introduction

Equality is the principle of ensuring equal rights and preventing discrimination based on differences such as gender, ability, and age. Inclusive design aims to provide equal opportunities for all individuals to use products and services regardless of their characteristics (da Silva & Almendra, 2007). Gender is an important consideration in inclusive design as it significantly impacts individuals' experiences and needs. Therefore, it is important to reevaluate gender for inclusivity and equality, as the concept of gender has evolved with the emergence of feminism, gender studies, and queer theory. Inclusive design practices can challenge binary gender norms and reduce the reliance on performative behaviors and norms to reproduce and reinforce existing gender norms. This study aims to examine inclusive design in the context of performative gender and support gender-equal design solutions in household electronics design using a material-semiotic methodology.

## Theoretical background

This section will provide an overview of the concepts of inclusive design, performative gender and gendered products.

## Inclusive design

Inclusive design is a design approach that aims to create products and services that are accessible to all individuals, regardless of their specific characteristics such as gender, age, or ability (Clarkson & Coleman, 2015). This approach is similar to other approaches like universal design and design for all, but it goes beyond these approaches by considering the functional, emotional, and identity needs of users across the entire population (Keates & Clarkson, 2003). Inclusive design takes into account the social and cultural context in which the product will be used and should be “reasonably” possible for everyone to use (Persson et al., 2015). To achieve inclusive design, designers should consider inclusivity at all stages of the design process and consult with a diverse group of users when possible (Warburton, 2003). The Addressing Framework, which consists of nine different identity considerations, can assist designers in understanding the range of potential users and the complexity of human identity and experience. These considerations include age/generation, disabilities, religion and spirituality, ethnic and racial identity, socioeconomic status, sexual orientation, indigenous heritage, national origin, and gender (Patrick & Hollenbeck, 2021). Inclusive design has the potential to increase the marketability of products by considering the needs of individuals with disabilities in the design process, leading to an increase in potential buyers and sales (Owen & Johnston, 2003). Additionally, inclusive design is an important area of study for gender-inclusive design. Millennial consumers prioritize socially conscious purchasing decisions and want brands to consider the lifestyles and personalities of their target users, rather than categorizing them based on traditional criteria such as gender, race, or age (Rukmangadhan, 2019). However, designs that are based on gender stereotypes can have a negative impact on inclusivity. Metaxa's research found that web design can influence an individual's sense of belonging to a particular community or culture, and the design of web interfaces can perpetuate gender biases (Metaxa-Kakavouli et al., 2018). Gendered physical products can also lead to the provision of products that do not appeal to different users. In conclusion, inclusive design practices challenge and move beyond binary gender norms and create a more welcoming and inclusive environment for all users, regardless of their gender identity or expression. Designers should consider inclusivity at all stages of the design process, consult with a diverse group of

users, and take into account the social and cultural context in which the product will be used to ensure that the needs of all users are met.

### Performative gender

The sex and gender have been widely studied in various fields, including psychology, sociology, design, architecture, and engineering. However, using these terms interchangeably in researches and everyday language can cause confusion (Gentile, 1993). Basically, sex is based on biology, while gender is based on social and cultural norms. The definitions of these two terms provided by the Cambridge Dictionary are as follows: Sex; "The physical state of being either male, female, or intersex" (Cambridge Dictionary, 2023b). Gender; "A group of people in a society who share particular qualities or ways of behaving which that society associates with being male, female, or another identity" (Cambridge Dictionary, 2023a). Judith Butler argues that gender should not be equated with dichotomies such as masculinity/femininity, male/female, or man/woman, but rather should challenge these dichotomies (Butler, 2005). Gender roles, which are behaviors attributed to particular genders, are shaped by social norms and discourse, resulting in the development of culturally specific gender identities like femininity and masculinity (Johnson & Repta, 2012). These identities can change over time and vary across cultures. Gender roles are not determined by sex, but rather are socially and culturally constructed. By distinguishing between sex and gender, it is possible to use terms like "feminine" and "masculine" descriptively, meaning they do not necessarily reflect an individual's biological sex or gender. In this study, these terms will be used to convey gender perception rather than refer to gender or sex. However, through the process of socialization, individuals identified as "women" are seen as one of the binary genders that make up society, and their individual and gender identity is shaped. From infancy, gender identity is influenced by gender roles, stereotypes, and culture. Gender roles often portray women as having domestic responsibilities, such as caring for the home, family, and children, as well as cooking (Kaypak, 2016). Queer theory and performative gender theory challenge traditional definitions and roles based on biological characteristics. Butler suggests that gender is a social construct shaped by cultural and social factors, rather than being an inherent, fixed identity (Butler, 2005). Simon de Beauvoir famously stated that "One is not born, but becomes a woman," emphasizing that biological characteristics are not related to gender norms (De Beauvoir, 2014). Similarly, Butler argued that gender is imposed through binary systems and is constructed through performative behaviors that are determined by culture. The way individuals present their bodies through performative behaviors helps to reproduce and reinforce existing gender norms. These behaviors, which are shaped by cultural expectations, can be seen as signs that carry the history and cultural meanings of gender. The social consequences faced by those who do not conform to binary gender norms, such as punishment or stigmatization, serve to maintain and preserve these norms (Butler, 1988). Social expectations about gender roles and behaviors can manifest in many different ways, including the stigmatization of men who engage in traditionally feminine activities like housework (Doğanay, 2021). Gender is given meaning through performativity, as well as the material aspect of performative behaviors, such as the gendered

design and marketing of products, supports the continuation of binary gender codes (Canli, 2018). Additionally, the perception that certain household products are only intended for women can also reinforce gender norms and perpetuate unequal gender roles. On the other hand, behaviors, which can include the way an individual presents their body and engages with gendered products, help to reproduce and reinforce existing gender norms. In summary, performativity is not just a "performance," but encompasses identity, behavior, and the formation of norms as a technical concept.

### Gendered product

The concept of "product gender perception," or "gendered product," refers to products that are not designed specifically for use by a particular gender, but are perceived as suitable for one due to factors such as design, advertising, and branding (Alreck, 1994). Studies have shown that social and cultural structures, as well as individuals' gender identities, can influence these perceptions (Allison et al., 1980; Golden et al., 1979; Iyer & Debevec, 1986; Milner & Fodness, 1996). Previous research has indicated that women tend to prefer products they perceive as feminine, but do not mind using products considered masculine. Men, on the other hand, tend to use products perceived as masculine and avoid those seen as feminine (Van den Hende & Mugge, 2012; Wolin, 2003). However, it is important to note that these behaviors may have changed over time and may vary depending on different cultures and societies. Designers consider various types of information when creating a product, including aesthetic, semantic, and symbolic elements, in order to facilitate consumer evaluation and use, making the product a means of communication (Alreck, 1994). However, research has shown that visible design characteristics, as well as advertising and promotion, can also influence perceptions of gender for products (Güngör, 2016; Wolin, 2003). Gender perceptions of products can affect marketing strategies and ultimately influence purchasing behavior (Ritnamkam & Sahachaisaeree, 2012). Advertisers can use techniques such as color, shape, sound, and graphics to emphasize masculine or feminine qualities of a product to appeal to a wider market (Güngör, 2016; Stuteville, 1971). Consumers can interpret the gender codes on a product and this can influence their decision to purchase a product that aligns with their own gender identity (Drake & Radford, 2018).

In summary, there are multiple factors that can affect the perceived gender of a product, and it's important to consider social and cultural structures, as well as individual's gender identities, when designing products. Adopting a socially inclusive design approach, taking into account factors such as design, advertising, and branding can lead to more equitable and inclusive results.

### Methodology

According to Law (2019), material semiotics is a set of approaches to social analysis that focuses on exploring how practices in the social world are shaped by the physical stuff involved in those practices. It includes a range of traditions and disciplines, such as actor-network theory, feminist material semiotics, anthropology, cultural studies etc. Material semiotics is a tool that we can use the study of how objects and materials communicate meaning through their form, appearance, and function (Law, 2019). This field of study exam-

ines how the design and use of objects and materials convey cultural values and norms. For example, the color, shape, and function of a product can all convey cultural associations and meanings that are specific to a particular context. In this study, this approach was only applied through product form in the context of gender.

### Product form

We use our senses, such as sight, touch, smell, hearing, and taste, to interact with products. The way a product is used, as well as variables such as the timing, environment, and manner of interaction, can affect how we use our senses. Sight is typically the first sense we use when interacting with a product, followed by touch, smell, hearing, and taste (Fenko et al., 2010). The shape of a product can also play a significant role in our perception of it (Norman, 1988). We gather information about products through our interactions with them and use this information to form opinions and assign values to the product. These opinions and values can be influenced by cultural, personal, and social experiences, and may vary between different societies. When interacting with physical products, the design features can convey information about its use and purpose, and also affect our aesthetic experience of it. The form of the product can influence our perception of it and potentially convey gender references, which can be intentional or a result of the required form for the product's function. Intentional gender references may be influenced by cultural and symbolic codes are associated with a particular gender and shapes can be perceived as feminine or masculine (Van Tilburg et al., 2015). Likewise, anthropomorphism, or giving a product human-like qualities, can also affect how we perceive its gender (Van den Hende & Mugge, 2012). However, the formal features of a product are not only determined by the designer's decision. They may also be influenced by various standards, regulations, and technological capabilities etc. This is a question that will not be addressed within the scope of this study. Geometric shapes and graphic arrangements used in packaging design can impact the purchasing decisions of male and female consumers. Female participants in the study preferred curvier, curved, and freeform shapes, while male participants preferred cubic and angular shapes. When it comes to graphic arrangements, female participants preferred symmetrical and curved designs, while male participants preferred straight and intersecting lines (Ritnamkam & Sahachaisaeree, 2012). These preferences may be influenced by gender stereotypes and how certain physical characteristics, such as round versus defined body shapes, are perceived as more feminine or masculine (Van Tilburg et al., 2015). However, individuals may not feel comfortable using products or services that do not align with their gender identity (Fugate & Phillips, 2010). While there is a parallel between the feminine or masculine shapes preferred and the individual's gender identity, this strengthens the relationship between shape and gender and reinforces the gendering of products. The amount of gender-based stereotypes carried by a product can also affect its perception as masculine, feminine, androgynous, or gender-neutral. For example, products with more "masculine" elements and angular, non-curved shapes may be perceived as more "masculine" and convey a strong, dominant image. The masculinity of a product can also be used to distinguish the quality of similar products that serve the same function, with products featuring more features

often being perceived as higher quality based on gender stereotypes. The following products were ranked based on their prices in December 2022 on Trendyol.com, which is an online shopping platform widely used in Turkey. It can be observed that products with superior performance and higher prices tend to feature more masculine shapes, with sharper and more angular lines. The use of color, material texture, and



Figure 1. Grundig Hair dryer designs, ranked based on their prices in December 2022 on Trendyol.com from most expensive to least expensive and from highest to lowest in terms of technology and performance

shine also reinforces the gendered implementation. Epilators are a product category often targeted towards women. Despite the act of removing body hair not being gendered, gender stereotypes can influence the design of these products. Personal care products are associated with the body and also have a cultural influence on shaping individual visual identities. As a result, gender stereotypes are more effectively reflected in personal care products that shape the body, in comparison to small household appliances like vacuum cleaners and kitchen appliances used in the home. The listed epilators are ranked from most expensive to least expensive and from highest to lowest in terms of technology and performance. It has been observed that, as with hair dryers, epilators with more advanced features and higher prices tend to incorporate traditionally masculine elements. On examining the formal connections between epilators, it becomes apparent that they exhibit characteristics that are traditionally regarded as feminine, such as having an oval, curved, and soft-lined design. With the advancement of technology, we observe that these formal features are slowly evolving from an oval shape to flatter ones, which brings them closer to the shapes typically associated with masculinity. For example, the most expensive and technologically advanced epilator from the same brand shares a similar design with their elec-



Figure 2. Braun Epilator design, ranked based on their prices in December 2022 on Trendyol.com from most expensive to least expensive and from highest to lowest in terms of technology and performance.



Figure 3. Braun epilator design (left), Braun electric shaver design (right)

tric shaver (see figure 3).

The existence of gender perceptions based on product form is also seen in countless examples in the global market where products are consciously used to reach a wider audience. However, according to research by Tilburg, products that are more strongly gendered tend to have higher sales than those that are less gendered (Van Tilburg et al., 2015). Nevertheless, increasing sales or user preferences due to the gendering of a product does not necessarily mean that gendering the product has positive results. While there may be commercial success, the impact on society is a controversial issue regarding gender equality and inclusivity. As mentioned above, repeated gender patterns reproduce existing gender judgments and thus continue to be sustained. The increased sales or user preferences resulting from the gendering of products can be presented as evidence that existing gender patterns are being continued. From a feminist perspective, this should be evaluated not as a success but rather as evidence that impedes gender equality. As previously mentioned, when discussing performative gender, evaluation cannot be made solely through the lens of binary gender. There are many people with different gender identities. In this diversity, presenting products as only divided into two groups and evaluating the sales and preference rates does not coincide with the idea of a system that works inclusively from a feminist perspective. However, as shown in the examples, when comparing the gendering of products and their performance, reinforcing gender inequalities by using masculine elements in the gender codes of high-performance and expensive products means that gender inequalities in products are being continued. A product does not necessarily have to be made stronger, more durable, and expensive by using masculine elements.

### Concluding discussion

The provided information highlights the significance of inclusive design in product design and advertising, the influence of gender on product perception and the role of social norms and expectations in shaping gender performance. To create inclusive products and advertisements that are welcoming to all individuals, regardless of their gender identity or expression, designers should consider avoiding the use of gender stereotypes, seeking input from a diverse group of users during the design process and taking into account the needs and preferences of a wide range of users. Additionally, designers should be aware of the impact of advertising and promotion on the perceived gender of a product and how this can affect purchasing behavior. It's crucial to analyze these factors together to have a more extensive understanding of the intersection between inclusive design and gender. To achieve

inclusive design solutions that take gender and performative gender into account, designers should consider;

- » The functional, emotional, and identity needs of users across the entire population, taking into account the social and cultural context in which the product will be used.
- » The Addressing framework, which consists of nine different identity considerations, such as age/generation, disabilities, religion and spirituality, ethnic and racial identity, socioeconomic status, sexual orientation, indigenous heritage, national origin, and gender.
- » Avoiding the impact of gender stereotypes and the perpetuation of binary gender norms in product design, advertising, and marketing. Because, the impact of gendered product design on purchasing behavior and the potential for reinforcing unequal gender roles.
- » The importance of considering the needs of individuals with disabilities in the design process in order to create functional and aesthetically pleasing products.
- » Consider the visual and symbolic elements, such as color, form, shape, and graphic arrangements, on gender perceptions of products to avoid inequality.
- » Consider the influence of social and cultural structures on gender associations with products.
- » Consulting with a diverse group of users to gather input on the design process.
- » Understanding the diversity of gender identities and expressions and the potential impact of design on these identities

There are several limitations to this study that should be considered when conducting future research. One limitation is that the information provided is largely based on research conducted in the past, and it is possible that social and cultural expectations around gender and gender roles have changed since this research was conducted. Additionally, the research provided is largely based on Western cultural perspectives, and it would be valuable to consider the experiences and perspectives of other cultures.

In conclusion, it is clear that gender and performative gender play a significant role in the design and perception of products. Designers should be aware of the impact of social and cultural expectations on gender roles and how gender stereotypes can influence the design and perception of products. By considering these factors, designers can create more inclusive and welcoming products that consider the needs and preferences of a diverse range of users. Further research is needed to better understand how social and cultural expectations around gender and gender roles may have changed over time and how these expectations vary across cultures.



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