Academy for DESIGN INNOVATION MANAGEMENT Conference 2019
LONDON, UNITED KINGDOM
18–21 JUNE 2019
Research Perspectives IN THE ERA OF Transformations

Queer-Sensible Designing

Challenging Normative Gender through an Industrial Design Practice

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Conventional design practices regard gender as a given precondition defined by femininity and masculinity. To shift these strategies to include non-heteronormative or queer users, queer theory served as a source of inspiration as well as user sensitive design techniques. As a result, a co-design workshop was developed and executed. Participants supported claims that gender scripts in designed artefacts uphold gender norms. The practice did not specify a definition of a queer design style. However, the co-design practice opened up the design process to non-normative gender scripts by unmasking binary gender dichotomies in industrial design.

Keywords: Design Practice, Gender Design, Participatory Design, Queer Theory, Gender Normativity

Introduction – Co-Constructions of Design and Gender

Despite numerous revolutionary changes in many European and North American societies, gender roles did not mitigate their power to discomfort until today. #metoo, gender pay gaps, mocking awards or homophobic crackdowns are recent symptoms of the unease with every day (hetero-)sexism. As gender studies establish as a research field, the influence of gender on engineering and industrial design processes are illustrated. At the same time, queer theory extends previous gender theories beyond the dichotomy male-female and criticises it as being of discriminatory nature. While design processes do not yet have adopted an attitude towards gender stereotypes in its discipline, post-structuralist and non-essentialist theories produced insight to the social impact of designed artefacts and the resulting responsibility of designers.

As early as in the design education, the designer's female or male gender already predefines their career orientation (Stilma, van Oost, Reinders, & Eger, 2005). Professionally designed goods also communicate design cues correlating with the designer's gender (Stilma, 2008). Accordingly, practical techniques available to industrial designers, which aim at designing for a specific gender, reproduce concepts of masculinity or femininity by defining subcategories of binary gender based on statistical data and endow them with product requirements (Stilma, 2010; Schroeder, 2010).

The aforementioned established techniques or approaches consider gender as a predefined human characteristic and do not target gender as a social construction. In contrast, the actor-network theory (ANT) from science and technology studies presents an understanding of how technology and society mutually shape each other. As a key assumption, Latour (1992) explains how designed objects or non-human actors, so called actants, serve as supporters of another actor's "program of action" and are balanced vs. their "antiprograms". A designer thus delegates their creation to serve a certain program that influences the behaviour of its user. Similarly to film scripts, which define what actors do, Akrich (1992) calls these delegations "scripts" in which

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the designer inscribes their "vision of (or prediction about) the world in the technical content of the new object." (p.208).

This concept of scripting was extended to or specified on gender identities of users of technology. Van Oost (2003) describes that "gender and technology shape each other mutually" (p. 208) whereat designed objects define their users through "gender scripts". According to her, designers implicitly or explicitly make assumptions about the user's gender. Her research on Philips shavers showed that they configured the user's masculinity as technologically versed by offering additional settings and functionality, which was also expressed through the styling of the casing. Users of the Ladyshave were scripted contrarily. They were not only assumed to be female but also to have a lower affinity to technology. The shavers targeted towards female customers hid all reference to the inherent functionality underneath their round white casing. According to this model, the designers of Philips used the gender dichotomy of technology affine men vs. technologically alienated women and scripted it in the design of the different shavers.

Engineering or designing objects also unintentionally establishes gender scripts. The construction of the user is influenced by the personal context of the author and thus "gender neutral" design is said to be impossible (Brandes, 2010; Brandes, 2008)

Materialised Morality

Though ANT's script concept serves as an analytic tool, it cannot supply the designer with predictions, whether a user will appropriate the artefact in the scripted manner; it remains open to resistance (Ingram, Shove, & Watson, 2007).

Another point of criticism is that the ANT is rather amoral. Verbeek's (2006) theory of technological mediation extends therefore the script concept and argues that a human actor enters a relationship with a non-human actor. The newly shaped entity has experienced mediation, while the designer delegated the roles of both actors. Verbeek acknowledges that thereby society is steered technologically and ethical questions are raised. Designers are moralising technology depending on how they anticipate the mediating role of their artefact: "designers are doing 'ethics with other means'" (Verbeek, 2006, p. 369). He names already two options to anticipate mediation: by imagination and by Constructive Technology Assessment (CTA). The former is solely relying on the designers themselves while the latter is meant to "involve all relevant stakeholders"(p. 376) to shape a "democratic way to 'moralize technology.'" (p. 372).

The contradiction that established design practices construct gender, however regard it solely as a natural binary, supplies us the challenge to extend design processes beyond male and female to a conscious and responsible practice. It directly leads to the question of how a design can deliver a materialised gender that is substantially open to queer and sustainably shifts its stakeholders towards an ethical characterisation of gender or in other words: how can design sustainably shift the persons concerned to adopt ethical opinions about any forms of gender?

Materialised Normativity

The designers' role in the social (and technological) construction of gender can be concluded, that they as the protagonists in design processes are not only constructing and re-constructing products, but also gender. Their scripted artefacts are representatives for their assumptions about gender. A designer may change their claims on gender, however the product remains the same. The user's or owner's context is then deciding on the interpretation of these gender scripts and might accept or violate them; however, the artefact remains as a supporter of a particular ideology of gender. While it remains open how individuals perceive, accept and repeat these statements about their identity, queer theory can explain these dynamics and serves as a source of inspiration for a design process.

Butler (1990) describes gender as performed through repeated acts and "real only to the extent that it is performed" (p. 527). By implication, there would be no objective, natural gender or gender decoupled from social processes. It is not a user characteristic but rather an apparatus by which the normalisation into male and female occurs and defines what existence is worth living (Butler, 2002). She uses the example of Trans*-students who became victims of death threats after using their school's gendered bathrooms. This gender performativity is not described as a choice of consumerism, but rather as "the repetition of oppressive and painful gender norms" (Butler, 1992, p. 84); people cannot perform their gender by freely selecting the props

associated with masculinity or femininity. In design, Sparke (1995) identifies these gender norms in a hierarchical binary language system as in “universal values” vs. “fashionable” or “minimal form” vs. “surface ornamentation” (p. 222). She finds design terms associated with femininity are generally subordinate to their masculine counterparts.

Design seems to be subjected to these gender norms of which subversion is difficult. At the same time, people self-identify as Queer and offer an understanding of a gendered human beyond a heteronormative male or female. However, Queer itself cannot serve as *the* subversion of gender normativity and cannot refer to a particular community. The term was used pejoratively for LGBT and reclaimed by a younger generation in order to resist the “institutionalized and reformist politics sometimes signified by ‘lesbian and gay’” (Butler, 1993a, p. 20). Recently the term is also expressed through the definite binarism male-female i.e. by defining it as LGBT. Especially in continental Europe, e. g. in polish mass media, Queer serves as an umbrella term for LGBT (Szulc, 2012). More open and sensitive to the various definitions is Jagose’s (1996) explanation of queer being “always an identity under construction” and Sedgwick’s (1994) inference “that what it takes —all it takes— to make the description “queer” a true one is the impulsion to use it in the first person”.

To escape the determinism of heteronormativity and respect excluded queer individuals, practical acts have been designated as subversive to normative gender. Butler (1993b) mentions that drag could be subversive to the extent that it “disputes heterosexuality's claim on naturalness and originality” (p. 125). Very similarly, Sedgwick (1990) uses deconstructive analysis on dichotomies such as hetero-/homosexuality or male/female, describes them as already irresolvable instable and pleads to apply “material or rhetorical leverage” (p.11).

Deconstructive and Sensitive Design Methodologies

The aforementioned theories supply our work with numerous implications for a conscious and moral design practice that can be categorised in implications for stakeholders, implications for designed artefacts and implications for methodology.

About concerned stakeholders:

- Might be content with normative gender
- Might be Queer, which is true if the term is used in first person
- Gender scripts delegate how gender is performed

About designed artefacts:

- Delegate users gender role in gender scripts, e. g. manifested in the design language
- Gender is no commodity and subversion not a decision of consumerism
- existing designs script gender through the use of hierarchical dichotomies
- Gender scripts are interpreted depending on the context of the addressee
- Successful subversion of gender norms is not predictable

About methodology:

- Designers are responsible of delegating their users with scripts
- Involvement of stakeholders, i.e. by CTA, could democratise and morally justify the design process
- Deconstructive analysis enables to display and resolve gender binarisms
- “Cross dressing” may dispute heteronormativity’s claim on originality

Recent design works that treat gender beyond the female/male binary exist. For instance, Ehrnberger, Räsänen and Ilstedt (2012) introduced a practical approach with emphasis on the design language. The work orients primarily on deconstruction as they interchanged the power-suggestive design language of an electric drill, as a male-targeted “tool”, with the clean and tender design language of an immersion blender, as a female-targeted “kitchenware”. By that, they claimed to have designed beyond social norms and one identified their graphical design language as a reference to drag.

In a different approach, queer identities are considered using unconventional design practices. Canlı (2014) argues that in design gender norms need a deconstruction or reconstruction to shift boundaries towards queer individuals. She calls this process “queering design” or later “queerying design”, which Canlı (2017) applied in form of three workshop-based co-design sessions with feminists, LGBTI+ and queer activists. In her workshops, she focused on an applied generative approach to disrupt normativity in fashion, abstractly on linguistic

dichotomies with a word game and in a third workshop participants analysed and reconstructed spaces in a discussion setting.

Alternatively, the use of empirical methods to research on non-normative gender may fail, as it supports only observable categories, which are already assumed by how they are measured (Brim & Ghaziani, 2016). The addition of further categories of gender misses to open for queerness, instead these categories lead to a regulation of the intangible queer and suffer from "queer illiteracy" (Tsika, 2016). Additionally, the various contexts in which LGBTIQ terms exist prevent from practically gathering data, e. g. estimating people's homosexuality might refer to sexual behaviour, arousal, romantic affection or identity and leads to different outcomes depending on the question (Savin-Williams, 2006).

As already implied by Sedgwick (1994), a notion of queer, is then true, when it originates from those affected personally. In design processes, inclusion of personally affected stakeholders is satisfied through participatory design. Similar to Verbeek's understanding of democratically moralized designing such as CTA is context mapping, a set of participatory methods. This generative research technique, structures co-design workshops by combining several methods such as modelling toolkits or disposable cameras, and enables diverse participants to share their personal experiences and reflections (Sleeswijk Visser, Stappers, van der Lugt, & Sanders, 2005). Sleeswijk Visser et al. (2005) note about the participants that small groups (four to six) are advisable while non design practitioners may deliver less aesthetic and more personal results. Further, they present a preliminary phase to encourage participants to reflect about their personal context, the "sensitization" (p.5). Sensitisation is completed prior to the workshop but connected in terms of content and may consist of small tasks or activities e.g. prepared toolkits.

Qualitative research offers also applicable techniques such as deconstructive analysis. Translated to the materiality of product design, the design language is receptive for detailed analyses. Van Oost (2014) introduced a multidimensional matrix to analyse the relation between a product and its gender scripts. It serves to identify gender scripts implied through product design. The product design is here divided into form, function and user interface. Gender scripts are composed of three levels: gender symbolism, gender structure, and gender identities and additionally their effects on gendered users. An analysis is performed by investigating an artefact element by element and thereby completing the scheme (Table 1).

Table 1: Product Design – Gender Scripts matrix based on "Heuristic scheme for product gender script analysis" (van Oost, 2014)

Product Dimensions	*Gender Script Dimensions*			
	Gender Symbolism (dichotomies) e.g. control/obey	Gender Structure (Context) e.g. location (domestic/public)	Gender Identity (Personal Characteristics) e.g. daredevil	Effect on Gender e.g. perpetuating gender stereotypes
Form (Design Language) e.g. symbols on identities	…	…	…	…
Function e.g. gendered activities	…	…	…	…
User Interface e. g. presupposed competences	…	…	…	…

A different model, which is rather focused on the design language and serves to identify the relation between explicit design language, implicit symbolism and abstract ideologies, is a framework of triangular or pyramid shape (Figure 1). Mulder-Nijkamp and Eggink (2013) originally developed the framework to translate explicit two- to three-dimensional design cues of a product portfolio to an abstract brand identity and vice versa. The abstract construct of a brand identity consists of symbols expressed through design features. Similarly, the social and technological construction of gender or rather a person's gender identity is, among others, performed through gender scripts, which are again represented by symbols and design features in a single

product. Hence, this framework can offer an alternative method to support the identification of their inherent gender scripts.

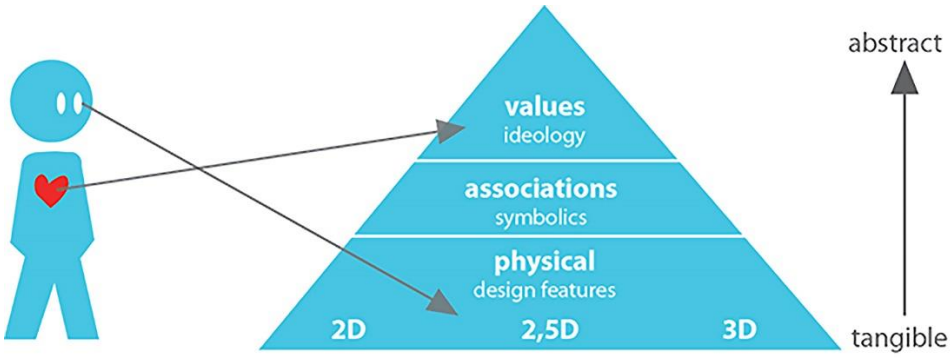


Figure 1: Adapted brand translation framework (Mulder-Nijkamp & Eggink, 2013)

Open-to-Queer Co-Design Workshop

We assume that applying empirical methods to assess Queers and their positionality to design poses a paradox or intricate application, while qualitative studies, especially those that include "queer" participants, promise to deliver intimate perspectives, preferences and suitable design features. Methodologies available to co-design are able to include identities entitled to violate gender norms. The scope of this work limits already the frame for a practice and partly predefines the resulting approach.

Firstly, the further work was limited to three main issues: (1) the real and personal impact of artefacts on queer or open to queer people, (2) the perception of gender (scripts) in objects, and (3) the personal ideas to counter possibly discomforting design. The identified challenges as well as the suitable techniques were concluded to a co-design workshop under the title "Queering Design" and the theme "bring your object". The allusion to previous work is intended as well as the temporal context generated through arranging such a study during pride month June. The resulting generative research workshop is sketched in Table 2 and elucidated more precise thereafter.

Table 2: Structured workshop scheme

Workshop Phase	*Duration*	*Content*	*Material*	*Means of Documentation*
Preliminary Organisation and Sensitisation	-	Invitation and task to select an object	-	None
Welcoming and Organisation	10 min	Workshop programme and declaration of consent	Screen, pens and printed documents	None
Information about Queer Theory and Design	20 min	Theoretical information on the subject matter, presentation	Screen	Minutes
Introduction of Actors	15 min	Making and telling introduction game with nameplates for participants and objects	Screen, paper, coloured pens, glue, scissors, screen	Minutes, photos
Discovering Gender Scripts	45 min	Fill in the blank of gender script translation framework	Screen, whiteboard, markers, post-its, pens	Minutes, photos, video
Break	15 min	Free for small talk, coffee or tea and snacks	-	Minutes
Deconstruction of Gender Scripts	60 min	Focus group discussion, making and telling	Screen, clay, Lego, trash, pens, paper, glue, scissors	Minutes, photos, videos
Wrap-up	15 min	Acknowledgement of participation and open discussion	Screen	Minutes
Total	3:00 h			

Preliminary Phase

We address with our workshop “queer” identities or those who are open minded about potential violations of heteronormative gender. The reason is self-explaining: participants who are content with essentialist claims on gender and heteronormative structures in technology are assumed to either lack motivation to participate or feel offended and probably offend or discomfort Queer participants. Potential participants were invited directly through personal requests or invitations sent via social media, messenger app and e-mail. Additionally we invited by spreading flyers. The addressees were LGBTIQ activists, members of “LGBT+” associations, Industrial Design Engineering students, friends and acquaintances, however everyone who was interested and open minded about the topic was welcome to participate.

These invitations (Figure 2) urged the potential participants to reply and sign up for the workshop in order to receive further information, while it remained open to anybody who could relate to the issue. This enabled also to communicate changed details of the workshop such as time and location.

The procedure started even before the gathering for the workshop. Preliminary, participants were asked to decide on an object they would like to bring. Since this task serves as a “sensitisation”, we offered implicit suggestions on possible items, in order to stimulate a personal reflection about the objects shaping their life.

However, not actually part of the practice, the eight participants were asked to sign a declaration of consent, that photos and videos can be taken and anonymised photos are allowed to be used for reporting the session.

One participant did not fill in their name and another one signed with a name other than known to the group. Further, the participants were instructed that their attendance was voluntary; they were free to interrupt at any time. To make the group feel experienced enough to participate in the workshop, they were told that their knowledge and attitudes would be all correct, as the facilitator is not omniscient. Since we did not expect participants with racist, Anti-Semitic or other group-focused enmity, we were able to express this statement without risks.



Figure 2: Invitation poster and flyer for the workshop

Information about Queer Theory and Design

All with different socio-cultural backgrounds, participants were introduced to the subject matter in a condensed presentation of gendered design processes (Figure 3) and the concept of Butler's gender performativity as a mediator of queer theory. Participants were encouraged to understand how the repetitive acts of gender performativity upholds the normative binary of gender. On that account, participants should be able to open up to a more diverse understanding of gender than male and female and grasp it rather as an apparatus by which the normalization occurs (

Figure 4).



Figure 3: Simplified gendered design process

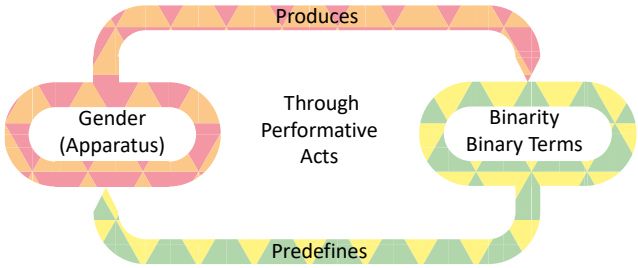


Figure 4: Repetitive performative acts constructing gender

In an example, the role of industrial design was illustrated with product pictures of obvious gender scripts in products, i.e. their graphic language. Further, the concept of ANT was introduced by calling these objects actors, which perform gender.

Introduction of Actors

Though the participants were made familiar with the social construction of gender, the facilitator did not answer what queer could be in an oppressive binary gender system. Instead, the participants were intended to present themselves and their objects with the help of self-made nameplates (Figure 5). Nameplates were crafted mostly without extra features but only with text. All participants used their real names and gave descriptive names to the objects they brought. By introducing themselves and objects, the participants explained the reasons why they attended the workshop and why they chose the objects they brought.

Participants attended mainly because of personal interest about “gender in objects” and “mad” normative gender roles, or interest in queer theory and politics. The objects were heart-shaped sunglasses, a “man’s” perfume, a clip on lens for smartphones, a Casio watch, a pink chapstick, a “Dopper” bottle, a novel and a smartphone protective case.

Most participants had an intimate story about the object such as that their mum bought it for them (perfume and chapstick) or that it gives them “self-confidence” (heart-shaped sunglasses). For the participant who brought the “male’s” perfume, the relation became even more intimate since the perfume was bought while the participant identified as male, however now identifies as female and still wears the perfume. The participants who brought the book and the bottle regarded them as “gender neutral” objects.

Participants thought differently about the term queer and barely used it for themselves. One participant explained that she understands it as an “umbrella term” for LGBTI and would identify as queer.

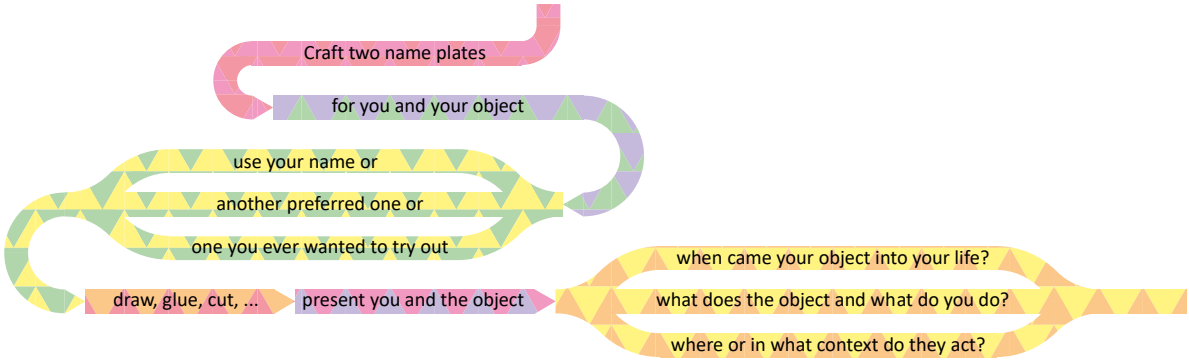


Figure 5: Guiding workflow of the introduction game

Discovering Gender Scripts

How gender is perceived and materialised is always dependent on context. With the help of the second part of the workshop, participants can express what inscribed gender roles they perceive. The gender script would then no longer be the perception of a single gendered user but a collective non-heteronormative perception of scripted gender in distinct objects. Not only the graphical design language, but also the multisensory characteristics as well as indirect knowledge e.g. from advertisements or etiquette are observed in this task

Mulder-Nijkamp's and Eggink's (2013) brand translation framework was revised to a gender script framework and drawn on a whiteboard. Participants were split up into two groups of four and asked to choose one object – or rather "non-human participant" – they would like to investigate. The separated groups selected the chapstick and the perfume and filled in the blank of the triangle from bottom to top – from explicit design language to gender scripts (Figure 6).

When the participants were stuck, the facilitator explained that the transfer of a design language cue to a gender script as the core of materialised construction of gender is implied through dichotomies. An aid to discover these biased gender dichotomies was inspired by Wittgenstein's (1967) letter to architect and interior designer Paul Engelmann: "the unspeakable is -unspeakable- already contained in the spoken". In contrast to Wittgenstein's interpretation of "the unspeakable" as "the mystical", we translated the term to the concept of gender scripts. To us, the unspeakable is an imperceptible design cue when trying to identify a gender script. Usually, only one part of a gender dichotomy is scripted into products. In order to identify gender scripts we can also focus on how an object cannot be sensed, e.g. a perfume that does not scent sweet was probably scripted to smell "male", while "female" scent is expected to be sweet. In this case, the user is unable to identify a certain dichotomy with the unknown smell, however the absence of a known design feature may identify the inscribed assumptions.

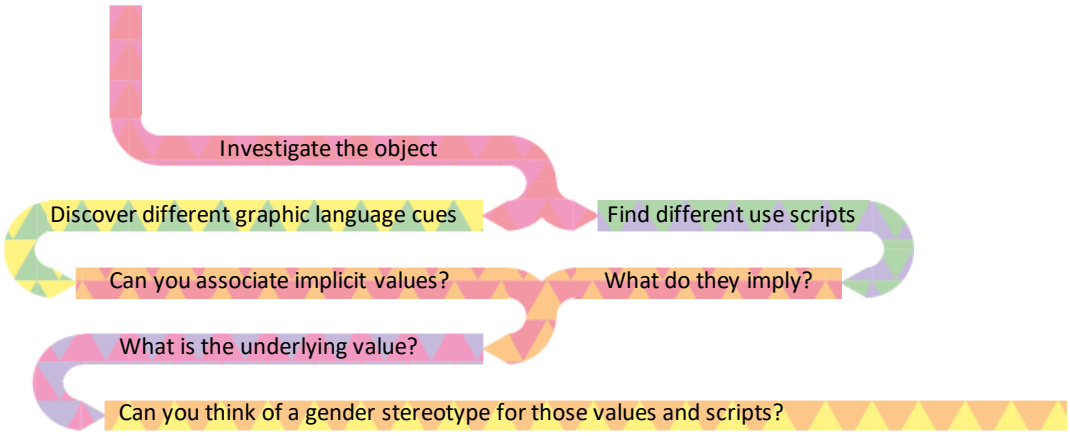


Figure 6: Guiding workflow to discover gender scripts

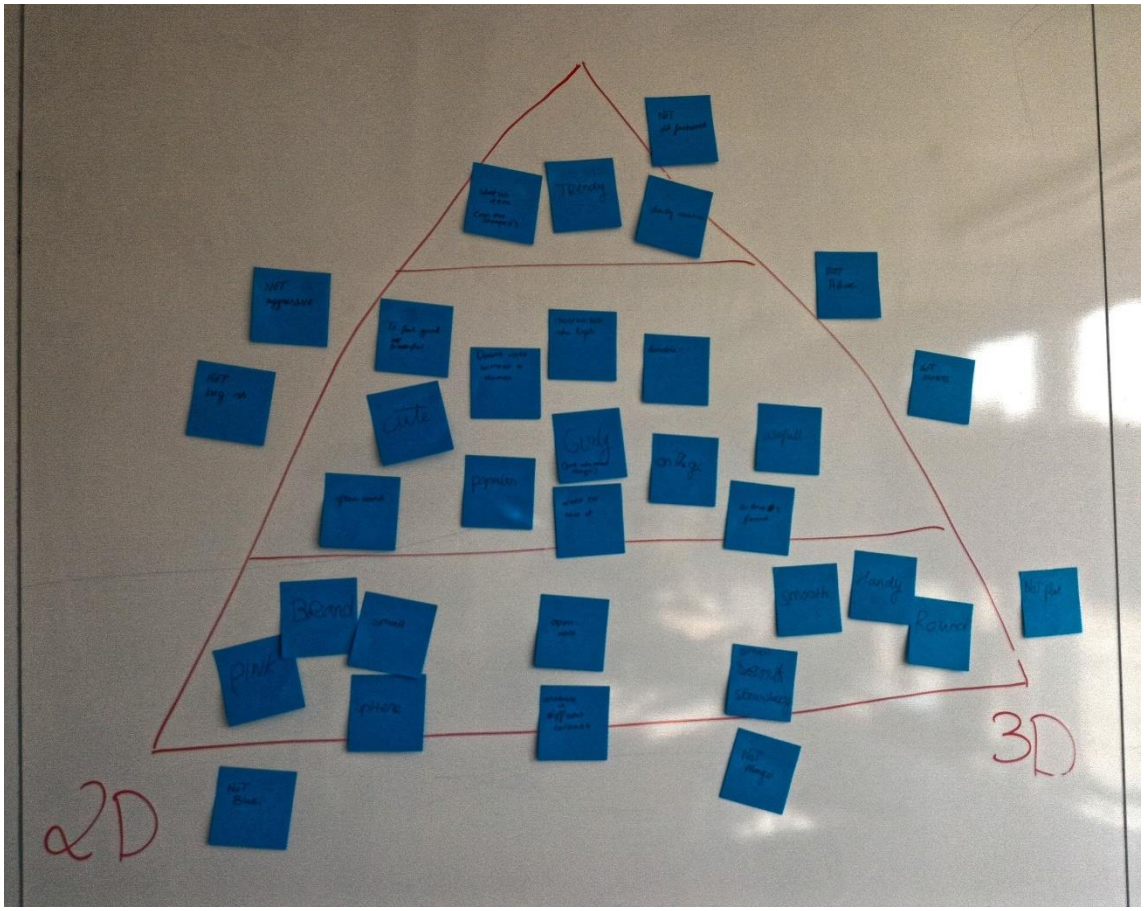


Figure 7: Gender script identification framework in use

The part was closed by presenting the outcomes to each other. A participant remarked that she is “annoyed by pink” while looking at the chapstick. The group found that the round shape and the pink colour are already symbols for femininity as blue marks products for boys. The shape was found to be simple “it’s round, you can see it, it’s pink, and not much to say there”. However, more associations were made: “cute”, “girly”, “use it every day, I don’t use it every day, but still.” Also the implicit cues such as “handy”, “on the go” use”, “trendy” and “to feel good or beautiful” support femininity, so that the actual value was found to be “girly everywhere” (Figure 7).

The perfume was perceived as slightly more complex and also with clearer gender scripts. Participants explained that it “has a masculine scent, because it’s a strong smell and it’s not sweet” and it is applied “for [male users] themselves, so even when they don’t go out” but that would “really depend on the person who wears it”. The communicated values were presented as “from the marketing campaign, when we were googling the product”. They found a corresponding product for “women” and described it as the “same product that was marketed for women, was saying it will make you irresistible”. They mocked that the “female” counterpart is called “playful” which would objectify women as “pussycats”. However, the presenter mentioned that she is not sure whether “it’s in the object itself” because the perfume bottles had “exactly the same shape” only the “golden, pinkish” lid and tinted glass. Everybody could then decide on either being “adventurous or irresistible”.

During the following informal coffee break, participants were invited for coffee and tea with cake. They used the opportunity to ask questions and express their thoughts or concerns about gendered products.

Deconstruction of Gender Scripts

Though, the critical identification of gender scripts is already an essential part in designing open to queer or non-heteronormative individuals, it is not drawing consequences for an actual change in materialised gender. Therefore, the most practical part of the workshop is set as a follow up to “Discovering Gender Scripts”.

Participants are stimulated to share which gender scripts they accept and which they reject openly. In a second step, participants focus on negatively rated gender scripts and bend or reconstruct them in order to fit to other values that do not reproduce normative gender dichotomies.

The previously analysed products were still meant to serve as the object matter that undergoes a *subversion*, *queering* or *deconstruction*. The stimulation of creativity and unconventional solutions is obtained by the co-design technique of "making and telling". In "making and telling", participants ideate in small groups about the question and imagine what their idea looks like or it is used. This idea, which may serve as a scenario or script, is visualised by crafting with available material. The result itself does not serve as a usable design object but rather as a non-human assistant, which helps participants explaining their vision of a beneficial design.

In the workshop, this phase started with a group discussion on what gender scripts are most problematic. To help them expressing their ideas we offered them Plasticine, Lego, cardboard, paper, glue, pens, scissors and trash parts from old design prototypes. Second, participants were asked to find alternatives that suit their beliefs or that subvert normative gender dichotomies. Binary gender categories became thus obsolete while a new design concept was proposed. Explicitly the idea of deconstruction as applied by Ehrnberger et al. (2012) was proposed to the group: they can change the view on a gender dichotomy by adding or changing symbolism that dissolves the binarism or disputes its claim for naturalness. In a final statement, each group or each participant described their ideas on how the inherent gender scripts could be altered. With the redesigns of gendered products or deconstructed gender scripts present, instead of the original items, the group was newly configured. New materialised genders or subversions of gender were then present as actants. The final statements already gave enough input to be able to be critically discussed again.

Since the workshop dealt with subversion of social norms it was possible and desired, that participants added their own ideas on how to progress through the co-design session. Therefore, the planning needed to be open to changes and flexible to add, skip and integrate parts.

A participant mentioned that the gender script of pink as a colour for femininity, was once a colour "for boys", and left her puzzled what colour could be used now in its place. Strong dislike was also uttered about the way the female gender is (re-)constructed in the gender script of the chapstick: women are rather "preparing" their lips to be always ready to pleasure men. The status of the product would have a "structure" that makes it "necessary" for women to use the chapstick. However, "some boys would need it, but wouldn't use it" because it suggests that the product is for women only and heteronormative men would not need a chapstick.

As a solution, a participant suggested to let it look rather like a medicine product in white, to claim lip lotioning as a general human health issue. One noted that there is a wide range of lip balms available that would better suit her perception of gender or queerness. She would miss a motivation to change the object as better ones already exist. In addition, other participants were stuck and they could not think of a way to use the object further to create a subversive version from it. It was "difficult to overcome specific categories" as "maybe the product is not easy to change".

Thus, the perfume was also used as a subject matter in this part. A participant also mentioned that she would not buy it if it would violate her own gender identity. Another participant said that the name for the perfume called "playful" for "women" should definitely be changed. She offered to call the perfume "let's play" and make the bottle longer, because it seems "not connected to any category" to her.

Further, she suggested to give the perfume a number instead as "Chanel calls it N°5". Alternatively, the perfume could have no name at all and it could be described solely by a natural symbol. An attendee claimed that the scent could be more "back to basic" with a strong "not sweet" smell and the category "after shave" might be called differently. A participant took some trash parts, namely wood and chicken wire and modelled a bottle-like shape.

In the end, the owner of the perfume was arguing that the product might be marketed to "men" and therefore it might propagate stereotypes accordingly just to "sell it". "The product was given [to her] because of this stereotype", but "now that I don't want to be seen as male I would still use it just because I like it." She would like not to deconstruct her perfume "but at least just saying never mind and still doing just like questioning them". Further, a participant supported her view by mentioning that "if you want to design something adventurous and girly at the same time or maybe just girly, why not?"

Another participant's crafted object had "a lot of colours, which was showing the variety of personalities people have". By personalities, the participant also meant "genders". He stated that it came to his mind

because the group was discussing the colour of the perfume bottle. In contrast to that variety, he assumed that his book is “gender neutral”. He finally concluded that the act of questioning the inherent gender scripts in artefacts was already subversive to normative gender and limited the painful repetition of gender performativity in itself.

During the discussion, the making and telling objects (Play-doh, Lego, trash, drawing material) served less as a tool of expression than to fiddle around while talking and thinking.

After the possibly intense or exhausting workshop, the participants were thanked for their attendance. Though the crafted results could not serve as usable models, we explained to the participants that the input in the discussion was already the main goal of the workshop.

Evaluation

It is possible that participants experienced discomfort or had thoughts they were not able to share publicly in the workshop group or personally with the facilitator. For that reason, a final anonymous feedback questionnaire was published online subsequent to the workshop. The previously described techniques were evaluated separately and their impact on the participants was estimated. Participants were also able to answer freely what they would like to have changed or improved.

All participants answered to remember the different parts of the workshop, however two participants did not understand the making and telling technique “Deconstruction of Gender Scripts”, while the rest understood everything. In general, participants felt that they acquired new knowledge, especially about queer theory and about how gender materialises in designed artefacts. For one participant “The term “queer” isn’t really defined” after the workshop.

In general, participants appreciated the different sections of the workshop and agreed with the information supplied. An explanation for that was given: “But I do believe all participants were very open minded. I can’t help but think how someone who’s very attached to gender norms would have reacted, which leads me to the next answer.”, “I think what the gender ‘norms’ or ‘roles’ are could have been discussed more at the beginning, just to be more explicit why queer theory is handy for a lot of people!”

Since the facilitator did not particularly ask about any gender identity of the participants during the whole workshop, we asked a closure question: “Would you have liked to tell what gender you have (perform/identify with) in this questionnaire?” The question mainly serves to estimate the participants’ mindsets about the importance of publicly making claims about gender after the workshop. Three would have liked to, one did not, and three found it irrelevant.

Discussion

The co-design practice aimed at enabling design processes to be queer-sensible i.e. to regard those who were excluded by normative materialisations of gender. We consequently avoided all binary gendered assumptions, such as pronouns and gender identities of the participants in correspondence. Reporting about this workshop however, we used gendered pronouns to refer to certain participants. Most participants made claims about their gender identity and accepted to be assigned to either male or female gender. In their case, an accurate use of established pronouns was possible. The notation of they, them, their or theirs can be used to refer to non-binary individuals, but neither is the term unambiguous nor is it accepted by all designated people. By using languages with grammatical gender, stakeholders obtain easily male gender scripts, when the generic masculine is used to refer to them. We suppose that this is especially the case in a professional design setting.

By asking people to bring their own object, the practice gained increased personal significance. The impact of designed products on the owner’s gender could be identified effortlessly. The implications of ANT were made tangible; however, participants brought small low-cost, low-tech products, which made it difficult for the objects to be the equal of participants. The objects, in contrast to the participants, were replaceable. Furthermore, when a particular object is delegated to the participants, they might be unable to personally relate to it and do not experience how objects influence their definition of gender and even their own gender identity.

The participants, who experienced a gendered determinism of design cues, support Uta Brandes’ statement that ungendered design does not exist. The participant who claimed to have brought the ungendered item, a

novel, probably only referred to the concept “book”, but neither to the content nor to the cover artwork nor to the author. The gender binary apparently claims that all design cues produce either male or female implications. However, the same does not count for critical design research. The introduced practice could unmask inherent gender scripts of product design. Even though, the targeted two artefacts came from a similar domain and time, personal care products, 2018, the inscribed gender constructed the user substantially different. While the perfume scripted its user as a man who is a successful ruling businessperson, the lip balm considered their user as female, a weak pleasurer for men.

Associations to design cues are not universal and depend on the context of the audience. While some participants urged to change certain product properties, because they felt irritated, others insisted on their freedom of consumption and ability to ignore. The workshop resulted in several suggestions about how to improve designed objects. Participants urged to process rather natural than synthetic material, to avoid pink colour, to give abstract or neuter names to products, and to refer to basic human needs in place of socially constructed needs of normative gender. Some participants remained in the perspective of passively consuming goods or not. While gender cannot be regarded as an act of consumerism, it appears to be a general issue of design that potential users are defined by their ability to consume, their propensity to purchase.

The fixed perspective from consumerism further limited the generative outcome of making and telling. It made the participants experience the determinism of gender norms, as Butler already mentioned: subversion is not easy nor predictable. Introducing new symbolism may fail and establish an equally strong norm that is oppressive towards queer individuals. Besides, the use of highly participatory co-design makes the practice dependent on the participants and their current state i.e. their availability, openness, gender identity, mood, creativity and curiosity. The facilitator can mediate these effects through a carefully chaired execution of the workshop; however, the setup itself also limits the outcome. The rather short and direct treatment of the matter constrained to less creative and artistic contributions, while a higher level of gamification may lead to lower direct involvement of the participants to the problematic. Moreover, the used materials and the design of the session determine the generative outcome of the applied techniques. Dependent on the analysed design artefacts, those require adaptation.

Compared to the established design processes presented in the introduction, such as Schroeder’s (2010), our practice also first analysed how users experience design objects and later on re-constructed them, however we avoided essentialist claims on gender. This reflects also in the choice of our methodology, instead of empirical studies, we applied qualitative research through participatory design. By implementing our proposed practice in alike professional environments, results that repeat essentialist normative gender might be avoided.

The practice did not cause any irritations to the gender identities of the participants. Applied techniques were mostly perceived positively, except by a few participants, who perceived the abstract step of reformulating disturbing gender scripts to introduce a new ideology of gender too theoretical and unmotivated. In subsequent utilisations, the design practice could overcome these limitations by illustrating the methods more detailed and by longer or multiple sessions. In professional settings, extrinsic motivators such as an allowance can attract participants. Future applications may be shaped around particular industrial design products and integrated into other design processes.

Conclusion

We reassigned a framework from brand design to identify those gender scripts, which are communicated through the design language. In contrast to Ehrnberger et al. (2012), it was not central to our work to recreate the design language. The participatory approach to respect queer in design or to “queer design” is similar to parts of Canlı’s (2017) work, however the applied methodology and perspective is substentially different. In our work we did not strictly condition all participants to identify as queer, feminists, or LGBTI+. Further, Canlı’s approach consideres many additional queerfeminist discourses such as about post-colonialism and intersectionality, while we based our work more on the explanations of the actor-network theory and in particular on (gender) scripts. Consequently the results differ in many aspects: the presented workshop in this paper is elaborating on existing industrial design products by applying analytic participatory methods, whereas Canlı’s work produced tangible and abstract de/re-constructions of normative gender.

We developed a practice that focused not on finding *the* essential queer symbolism, but rather to include a queer perspective on else biased industrial design research methods. Applicable for early design research phases, it critically identified and avoided oppressive gender norms. With our workshop, we opened the field of industrial design engineering to non-normative ideas of gender.

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