Design Fiction as Norm-Critical Practice

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Abstract. The transdisciplinary fields of design and feminist technoscience share a common interest in focusing on the world in a state of always becoming, always changing. Within feminist technoscience, norm-critical perspectives are implemented to shed light on unequal sociotechnical infrastructures. Within design research, generative methods of critical design and design fiction encourage processes of fictional prototyping and storytelling that infuse discussions on what kind of world we want to live in. The purpose of this paper is to illustrate how design fiction can be used as a method to address norm-criticality in media technology education. Based on a week-long design fiction workshop with undergraduate students, three student projects are analyzed in detail. The analysis suggests design fiction can be used as a norm-critical practice to invoke discussions on values and beliefs within media design processes as well as established narratives of futuring.

Keywords: Design fiction · Norm-criticality · Media technology Education

1 Introduction and Aim

Design fiction is a hybrid practice that functions in the borderlands between actual and possible worlds. It is an approach for visualizing and materializing alternative scenarios using design and storytelling and is being used as a platform for questioning status quo, invoking discussion on social and ethical consequences of emerging technologies and increasing political and civic engagement [1]. Vermeulen & Van Looy [2] show in their study on stereotypes in game culture how discriminating norms can affect playing frequency as well as motivation among female players. Racial, gender and cultural stereotypes have been quite persistent in the film industry, where marginalized groups are depicted in a negative manner or often not at all [3]. While portrayals are gradually changing for the better it is important to shed light on these issues so as to encourage positive change in the future media landscape.

Similar to intersectional feminism, norm-critical practices in media education can provide fruitful critiques on how and for whom digital games and films are produced and distributed. The practices highlight question such as; which stories are we telling? How and which characters are portrayed? How does this effect differences within and between cultures? How do dominant technologies, information systems and software affect our perceptions of the future?

The purpose of this paper is to illustrate how design fiction can be used as a method to address norm-critical perspectives in media technology education. Norm-critical

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perspectives stem from research fields such as feminist research and education [4], and while the terminology has not yet gained ground within design research, the emphasis on questioning norms and values in design, technology and information systems is well established in the areas of human-computer interaction and critical and speculative design [5].

Norms signify the 'normal' and address behaviors acceptable in a social setting. Lifestyle choices, clothes, greetings, table manners, public and personal behaviour – we are inscribed with many social norms in our daily lives - norms that are implicit and functional. The intention of a norm-critical perspective is not to create a society without norms and social rules of behaviour, but rather to place attention to certain dominant norms excluding and discriminating people and ultimately creating unequal cultures. Heterosexuality, ableism and whiteness are for instance critiqued as norms that can exclude and discriminate people, who do not follow the socially accepted behaviors within these discourses [6, 7]. Other norms of interest embedded and embodied in media design processes concern the relation between media designer and the presumptive users, technologies of choice, digital infrastructures and how stories of futures are framed.

2 Feminist Technoscience

Feminist technoscience is a transdisciplinary research field, which stem from decades of feminist critique within science and technology [8]. It is, similar to posthumanism, an epistemological knowledge production that challenges the anthropomorphical assumption of humans being at the center of the world [9]. The research field further critiques a positivist approach as being too limited and negligible towards knowledge production because of how it ontologically tends to separate researcher, objects and users. The theoretical framework of feminist technoscience suggests that we should view the world in a constant becoming where researcher, objects and users are much more inter-dependent and the relations between actors temporally and spatially change [4].

The fields of science and technology are entangled with sociotechnical networks and the relations (human and non-human) occurring between them need to be made ethically and politically accountable. Reshaping humanist concepts such as body, identity and gender through technoscientific practices can create more equal worldings [10]. Haran & King writes how the "'now' is not necessarily a shared experience, as we are materially embodied on different continents. We are subject to different local political economies, however transnational we might imagine our shared projects to be" [11:2] Science fiction, speculative fabulation, design fiction, critical design or even story-telling are all different genres, discourses and methods that can deconstruct and reframe our different temporal and spatial experiences of social norms and values [12].

3 Norm-Criticality

Criticality is rooted in a design tradition of questioning the ideas, exposing structures and creating a space for discussion of power, inequality, capitalism, industry and technology that underpins conceptions of design [7, 13]. Jonsson & Lundmark provide

a framework for making the invisible values in design visible through norm-critical design analysis. They suggest "norm-critical design can be understood as a sub-field of critical design where the specific focus is on the relationship between design and social norms" [7:5]. They introduce four perspectives - cultural representations, technology, interactivity and context of use - in their framework of norm-critical design analysis for interactive systems. The different perspectives illustrate identity markers such as gender, race, ethnicity and social groupings, interactions, or lack thereof, between people and artefacts and technologies can strengthen certain values and diminish others, for instance photo manipulation. The perspective of context reflects the diffractive approach of understanding how norms are manifested in everyday life and how this can differ temporally, spatially and geographically [4]. These perspectives focus on interactive systems and constitute an analytical framework relevant for similar mediations i.e. games, film and sound design.

4 Critical Practice in Design

I contextualize design fiction within design research by making use of Malpass' umbrella term critical practice in design [14]. Malpass' differentiates the practice with the subcategories associative design, speculative design and critical design. Associative design focuses primarily on confronting dominant traditions in product design and while this approach can certainly be useful in design fiction scenarios, speculative and critical design are closer at hand when situating design fiction. Speculative design creates a discursive space between science and technology and material culture. The designers work closely with materials and concepts which are often related to scientific practices and "the process of doing science itself figures as the design process" [14:339]. Speculative design places the attention on how our present development in science and technology is directed towards certain futures and advocates a dialogue on whether these are the futures we desire. In for instance Auger-Loizeau's speculative design project 'Afterlife' the debate concerns the ethics of human death. The design concept consisted of intervening with the usual decomposition process by connecting the body with a fuel cell that can produce electricity from organic matter. The electricity is then enclosed within a regular dry cell battery that can be used by friends and family of the deceased [15].

Dunne and Raby define the concept critical design as using "speculative design proposals to challenge narrow assumptions, preconceptions and givens about the role products play in everyday life. It is more of an attitude than anything else, a position rather than a method. […] Its opposite is affirmative design: design that reinforces the status quo" [16]. Practitioners in critical design offer alternatives to existing design objects and practices thereby providing a commentary on social, cultural and ethical matters. In Dunne & Raby's project *Robots* [17] normative values of how humans perceive existing and future relations with robots are highlighted. The robot bodies further challenge the popular cultural notions of robots in science fiction film and literature and suggest alternatives to what kind of material and form can be used.

Ambiguity in research is a risky thing and design artefacts can certainly become meaningless and confusing and lack the intended outcome of the design researcher,

especially with artefacts having an intended audience. Gaver et al. explain how an ambiguity of information, context and relationships moves us toward a 'relational ambiguity', where we need to interpret incomplete information, implement references seemingly incompatible and consider subjective individual experiences and attitudes onto new situations [18]. However, working with research through design and design fiction in an educational context ambiguity can become a useful design method for asking questions of how and why we use certain techniques, concepts, tools and methods and how these choices affect our futuring. Just as critical and speculative design are intentionally non-rational, so too are design fictions. The intent is to compel the audiences to simultaneously relate and question the design artefact thereby (re-) considering one's beliefs, values and behaviors [14]. According to Auger, the practices of design fictions, critical and speculative design share certain premises, where they "all remove the constraints from the commercial sector that define normative design processes; use models and prototypes at the heart of the enquiry; and use fiction to present alternative products, systems or worlds" [15:11].

5 Design Fiction

Design fiction is often used as an approach, or a technique, for creating exploratory and discursive spaces between the actual and the possible [19–21]. Sterling describes "the deliberate use of diegetic prototypes to suspend disbelief about change" [22]. Lindley and Coulton unpack Sterling's definition through the following criteria

1. something that creates a story world,
2. has something being prototyped within that story world
3. does so in order to create a discursive space" [23:210]

However, what this 'something' can be is far from easily defined. There have been many attempts to pin down a definition of this 'something', be it artefact, prototype, poetry, system or world, but it persists an intricate, fickle path [23, 24]. Gonzatto et al. proclaim that design fictions are not innocent creative plays [25]. The fictions are always created by someone, who has a specific intent of (re-)acting with present structures and Gonzatto et al. suggest that design fictions can have "both naïve and critical interpretations" [25:43]. Design fictions become naïve when they are exclusive, deterministic and disregard stakeholders without power. Yet, when the projects are inclusive, open-ended and a multitude of perspectives and values are considered, they become critical.

6 The Design Fiction Workshop

The workshop was part of a method course for third-year students at an undergraduate program in media technology. The students represent four different orientations within media technology – digital games, digital visual production, digital audio production and digital infrastructure. The aim of the week-long design fiction workshop was to introduce design fiction as a concept and method for undergraduate students to explore

their roles as media designers and critically reflect on the normative narratives of design by engaging with different design manifests. The students could either choose a manifest from a list of design manifests on the Social Design Notes website [26] or they could locate one on their own. I provided the students with a few directives on what the manifests should entail. It should hold a statement with aim and method, focus on design practices and preferably include some ethical considerations. What these ethical considerations entailed were later discussed when the students started experimenting with the manifests. This ultimately led to the selected design manifests differing greatly in genre, style, aim and age.

On the first day of the workshop the students were given a lecture on design fiction, allocated reading of Bleecker's essay "Design Fiction: a short essay on design, science, fact and fiction" [28], and a brainstorming workshop on the relation of design fiction and media technology. The students were then introduced to the assignment, which was conducted in smaller groups of 2 to 5 persons throughout the week. A few students chose to work with the assignment individually. The assignment was as follows:

1. Select a design manifest.
2. Create an artefact that challenges, problematizes or plays with the chosen manifest.
3. The mandatory documentation at the end of the week included a link to the chosen manifest, a minimum of one illustration of the artefact, a description of the artefact and an explanation on the difference occurring between the chosen manifest and the created artefact.

The student projects were about 30 in total and quite diverse in style and outline. One student group, for instance, created a narrative of a fictive advertising agency that was forced to create these absurd and confrontational images for a company. Another group sketched a house on water were their discussion points concerned the future of architecture and housing solutions from an environmental perspective. One student created a game concept where the player was rewarded doing actions that he or she normally would have been punished for. Malpass explains how designers work closely with materials and concepts often related to scientific practices and "the process of doing science itself figures as the design process" [14:339]. This mindset resembles the work done by several undergraduate students in how they worked with future scenarios on how the relation between humans and technology will manifest in a possible future. The three student projects described in more detail below were chosen based on the students' distinct discussions and prototypes in relation to the chosen design manifest.

6.1 Project MaybePhone

The selected design manifest The Ten Principles of Good Design [29] by Rams makes use of concepts such as innovative, unobtrusive, long-lasting and aesthetic to define what good design is. The students wanted to challenge the conformity of Ram's design principles by creating a design artefact that challenged the perception of how a communication tool should behave. They chose to illustrate a design artefact called MaybePhone with the intention of making the relationship between the user and communication tool less functional. The idea behind MaybePhone is it may or may not work like you expect it to. It can bounce away from you, become invisible or suddenly

play loud music. The students worked with questions such as what will personal communication tools look like in the future and how will the changing boundaries between body and tool change our communication?

6.2 Project Through Coloured Lenses

The selected design manifest The Karimanifesto [30] by Karim Rashid focuses on the work ethics of a designer. The project Through coloured lenses is an experiment with colours and lenses to explore how colours can work with and against each other. The students began their exploration by working with different digital colour schematics and then proceeded to create a prototype consisting of a set of glasses with different colour filters. The students also outlined a concept where the glasses can be used as voluntary self-censorship to erase certain objects, events or people.

6.3 Project HumTec

The selected design manifest is 1000 Words: A Manifesto for Sustainability in Design [31] by Chocinov relates design to ethics, sustainability and the anthropocene world-view. The project HumTec consists of a story world concept and illustrations of an artificial intelligence which in part follows the guidelines of the manifest. The critique of the manifest is visible, when the student discusses the prototype in relation to sustainability and technological access. The story concept is as follows; through human development and an increased consumption nature has turned into roads, housing and merchandise. Fertile soil has been covered with asphalt and forests are destroyed to make room for factories and buildings. Eco-friendly cities have sprung out of this development and HumTec is one of the companies working with the plant biospheres. HumTec's prototype is an artificial intelligence based on studies of the hummingbird. The students describe how the prototype will eventually work with pollinating and planting seeds based on the long-term strategy of rebuilding nature.

7 Discussion

In this paper design fiction is positioned through various branches of critical practices in design and further entangled with norm-critical perspectives. The situatedness and interests of the students as well as how the chosen manifests differed in style and aims was reflected in the diversity of the design fiction prototypes.

7.1 Analysis of MaybePhone

This project challenged the chosen manifest outlining what 'good' design is by distorting the functionality of a smart phone. The students made the phone unpredictable and difficult to use with the purpose of challenging the normative values and purposes of design and when discussing the future of communication and the fluid boundaries between humans and technology. MaybePhone is similar to associative design as it subverts an everyday object, the smartphone, and plays with its functionality and the

relationship between humans and technology. The project also contains speculative and critical design perspectives, where they contextualize their artefact with discourses of communication and values of 'good' design.

The project holds critical interpretations of the chosen manifest when the students worked with creating a set of opposing principles. The students' discussions revolved around future communication and how the MaybePhone implore new kinds of relations between the user and the phone when it doesn't work over distance. The norm-critical perspectives of the project are narrated in the ambiguity of the design attributes and helps designers question and re-evaluate what we are expecting of future communication tools. We are designing technology that should suit the user's behaviours but can the user also benefit from changing its behaviours for the sake of technology?

7.2 Analysis of Through Coloured Lenses

The students behind the project chose a manifest on how a designer should work, which led to a design artefact and a work process that conversed on censorship and the practices of a designer. The prototype itself holds both naïve and critical interpretations when it was initially created as a playful activity for experimenting with colour and material and then proceeded to become more critical as a practice of self-censorship. The students mentioned lenses can be used for avoiding certain objects, events or people, creating hidden messages or for subtitling films.

The Karimanifesto focuses on expected norms of designers, which turned the students in the direction of focusing more on how they perceive their own work ethics in relation to Rashid's principles. In this case the norm-critical perspectives is visible in relation to the students work process and the outcomes of their design artefact. Rashid doesn't value reflection or the past as meaningful and the students are very critical of this perspective. They consider their backgrounds as valuable for creating the design artefact and their learning outcomes has taught them things on how to design differently in the future. This project illustrates how one's own boundaries demarks the outlines of a design fiction project, which creates further responsibilities for the designer, or in this case, the students. The ethical aspects of their prototype should be further explored in terms of what is rendered invisible when using the lenses, who is excluded from using them or how can the lenses be beneficial in media outlets?

7.3 Analysis of HumTec

The student created an artefact and a story world that discusses the work practices of an engineer and implicitly a designer. The student differentiates its prototype with the manifest through two examples. One is the manifest suggesting it is important people understand how artefacts works, while the student discusses the challenges of creating technological artefacts that are understandable for everyone. The second example concerns material choice and longevity. The student prefers to create a product that is sustainable and has longevity rather than creating products that can't be recycled as the manifest suggests. However, this seems to be a misunderstanding from the student as the author of the manifest compares designers' tendency to work with inorganic materials rather than organic and how these materials are far from sustainable or recyclable.

The design fiction prototype creates a future-making narrative when it suggests a plausible future of less nature and more urban environments. Furthermore it creates critical focal points on the changing relations and inter-dependency of human and non-human actors (the humming bird). The student illustrates norm-criticality when creating fictive solutions to a changing future environment and also when discussing what is preferable when creating technological artefacts for specific users.

8 Conclusion

The multi-dimensional structuring of design fictions pose interesting challenges when attempting to shed light on norms and belief systems in media technology. The selected student projects bring forward norm-critical discussions on the intended role of a media designer and future relations between humans, animals and (communication) technologies. How we narrate our future-making practices in the present holds real-world consequences for our socio-material futures. Within an educational context design fiction works well as a critical, ambiguous and deconstructive form of meta-design and it also has the potential of encouraging students to act as change agents for creating alternative future-making socio-material practices.

Combining the processes of making (games, websites, graphic and sound design) with design fiction works well to disrupt the established narratives of the digital media in and out of the academy. Based on the student prototypes presented in this paper I consider design fiction a promising method for creating discursive spaces in learning situations so as to stimulate vital discussions on social, cultural, technological and ethical implications of the past, present and future.

Future work with design fiction, together with norm-critical and feminist techno-science perspectives, can include invisible infrastructuring in technological systems, cultural representation, diversity, interactivity, context, manipulation, the list goes on and on. Acknowledging these different socio-political discourses as well as the individual and collective situatedness of knowledges students and media designers embody, we can work to deconstruct and reframe the media landscape to be more inclusive and diverse.

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