

Perfect Objects for Imperfect Bodies, Perfect Bodies for Imperfect Objects. Why Does Design Need Extreme Users?

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Abstract

Despite knowing that perfection is an unsteady concept, mass society is unlikely to escape normalising pressures and be susceptible to negative differentiations of bodies, such as those with functional diversity. However, in co-creative design processes, these bodies can be understood as extreme-users and are welcomed for their diversity and empowerment. Artefacts similarly undergo inclusion and exclusion in creative and productive processes. Therefore, the stigmatisation and standardisation of human and artificial bodies are made explicit in extreme-users, whose importance in design processes lies in addressing them with no negative differentiation with respect to ordinary users, implying that objects' flaws would be embedded as identity and semantics. This paper questions the dualism of perfection/imperfection attributed to bodies and artefacts by normalising domains, and expects to corroborate design as a social activism tool for catalysing the paradigm of inclusion.

Keywords

Extreme-users
Design
Power structures
Inclusion
Empowerment

Introduction

One of the strategies for social control is the establishment of an unattainable definition of perfection: of the body, of artefacts, of places. The effort made to correspond to a systematic set of standards, which are strategically normalised by relations of power throughout social structures (institutions, schools, prisons), is evident. Despite the increasing awareness that the concept of perfection is not intrinsically linked to beauty or balance, and that it varies between the cultures, references or aesthetics of each individual, it is unlikely, as a social individual, to escape such pressures designed for mass society. This dictates trends, standardises languages and exerts power discourses that cyclically determine the normalising standardisation of subject (Foucault, 1979), as a body and mind entity, and everything it creates.

In terms of bodily representations, the struggle for meeting standards has secular origins. The Greeks conceived “stigma” for the purpose of signalling moral meanings to society. In the Christian era, it took the shape of religious arguments (Goffman, 1963) and, later, of discursive imperatives for differentiation, which began to act on corporeal materiality through corrective medical agency and to promote bodily invalidation, grounding today’s notion of functional diversity (McLaughlin & Coleman-Fountain, 2014).

Similarly, co-creation design processes that integrate extreme users present us with perspectives beyond our conventional knowledge, as they are a user group whose behaviour and wants express latent needs among the general population, thus potentially inspiring design professionals (Liikkanen, 2009). They are beneficial for a deeper understanding of their expectations - especially in the perspective of their own diversity, representation and empowerment, as referred by Raviselvam:

[...] extreme-user experiences are a great resource that leverages the differences in human abilities and transfers that knowledge for a more successful design outcome. Despite this prevalence and awareness of the advantages of extreme users and simulated experiences, their applications are generally limited to assistive and inclusive design solutions. As a result, a deeper understanding of their benefits, limitations, and strategies is essential, to adapt them for mainstream design. (2021, p. 16)

Similarly, in industrial processes, materials also have to match a “perfect” standard in order to pass quality control. The artefact, as an element made of symbolic meaning and physical matter, undergoes a process of inclusion (approval) or exclusion (rejection) throughout its creative, productive and logistical processes.

In terms of the intersection between sociology and design, the pressures of stigmatisation and the standardisation of human and artificial bodies are made explicit by the presence of extreme-users. Their value in design lies in addressing them with no negative differentiation with respect to ordinary users. Analogies and metaphors of contemporary anthropology may help us understand the relevance of design and technology as powerful agents in breaking

down the rigid social and material limitations on our bodies (Haraway, 2004), thus signalling a critique in terms of identity, aimed at fostering diversity and inclusion. Therefore, the aspiration of extreme-users to be included would be as empowering as the acceptance of identity and semantics in “imperfect” objects.

In order to promote an inquisitive reflection questioning the sociocultural standards that lead to the binary dualisms that promote domination over bodies and artefacts, this paper focuses on questions such as: what aspects of mass society relate to standards of differentiation and norms that exclude our identities? How can the comparison between body sociology and design semantics be insightful to understand societal norms? And how does this relate to the value of extreme-users in co-participatory design processes?

Beauty, Perfection and Power in the Historical Development of Stigma

Beauty, for which there is no solid definition, has origins in Ancient Greece and an intricate relationship with bodily aspects.

The Greeks, who were very knowledgeable about visual aids, created the term stigma to refer to signs on the body with which they sought to emphasise something extraordinary or harmful about the moral status of the person who bore them. The signs were made with cuts or fire on the body, and warned that the wearer was a slave, a criminal or a traitor — a marked, ritually polluted person who was to be avoided, especially in public places. (Goffman, 1963, p. 11)

Additionally, according to Bispo (2018, p. 37),

Plato presents us with a dialogue, in which Socrates proposes a set of reflections that seek to solve the problems that arise from diseases that cannot be cured, arguing that people who present an incapacity that prevents them from working, should be left to die.

Therefore, Plato and Aristotle proposed an idealised society ethic in which there was no place for incapacity. Because disability was considered an obstacle to survival, people with misshapen bodies were considered a burden (Bispo, 2018), which led to stigma’s core working mechanism: to assign to an attribute a new negative meaning that did not previously exist. It works as a relational language rather than a language of attributes, in which the acceptance of a given attribute would emerge from historical and social contexts (Goffman, 1963). This is fundamental to an understanding of the language of stigmatisation: to be able to associate its mechanisms with the operations of dominant cultural codes that exert manipulative power and social discrimination (Bispo, 2018).

The stigmatising relational language has found grounds throughout History in countless spheres and sectors of public and private lives within western societies. In the Renaissance, the case of Michelangelo’s ambivalent attitude in seeking to destroy and subsequently repair his oeuvre *Pietà* (Gilead, 2016) is a clear example:

It may have been that the judgement of the man was so great that he was never content with anything that he did [...] Michelangelo was wont to say that if he had had to satisfy himself in what he did, he would have sent out several [finished statues], nay, not one. For he had gone so far with his art and judgement, that when he had laid bare a figure and had perceived in it the slightest degree of error, he would set it aside and run to lay his hand on another block of marble, trusting that the same would not happen to the new block; and he often said that this was the his reason for having executed so few statues and pictures. (Vasari, 1896, as cited in Gilead, 2016, p. 2)

Since the Christian era, stigmatisation has evolved into two operating strategies: representing divine grace on the one hand, and on the other, medical allegations as religious claims against those with physical disorders. In the centuries to come, this became the origin of medicine's imperatives of discursive moral differentiation that began to act on corporeal materiality (Goffman, 1963), defining what is understood today as functional diversity (McLaughlin & Coleman-Fountain, 2014). Stigmatisation makes negative differentiations based on the inability to do something or on a non-compliance with standards, which results in invalidation.

Stigmatisation is built over the long term and supported by social convictions and stereotypes in a contextualised historical environment. It means that, to the extent of the variation in political and economic development, or religious, ethnic and cultural composition, each society creates specific socially-based patterns of exclusion for groups of people (Bispo, 2018). Today's stigma may only be understood if it is thoroughly analysed as a continued historical process, considering the changing strategies it creates to maintain the status of power (Bourdieu, 2011; Link & Phelan, 2013, as cited in Bispo, 2018) and the privilege of dominant classes over other social strata. The perceptual dimension of the body is crucial to understanding this operative logic.

Discourses of Control Towards Subjective and Bodily Standardisation in Mass Society

According to Merleau-Ponty (1945), there is no philosophical distinction between the body and the mind. More than a condition for perception, the body is the signifier of the state of being in the world, not detaching from the mind. Our perception of the world, as well as our position of existence in it, is not mental as in a punctual experience, but bodily as a whole phenomenon of perception.

In addition to an ambiguous, multiple and polysemic object of analytical study (Ferreira, 2013), the body, as a social construct, may be considered as a public object as much as an object of exchange of meanings by way of matter and signs. Within this duality, the body cyclically emerges as a field for the reproduction and reinforcement of patterns of social relations and power structures that are immanent in them (Alferes, 1987).

Since the Classical Period, the body has been known to be an object of power. The maintenance of social power is evident throughout history: no matter the society within which the body is contextualised, it is tightly constrained by a set of prohibitive and coercive disciplines (Foucault, 1979) as a mechanism to assert the values of the dominant class (Bispo, 2018) over bodies that supersede these values, using stigma as an element to promote social norms (Foucault, 1979).

These disciplinary values “on which disability discrimination is based are only considered as socially valid [...] in the form of physical impossibility or need for protection, hiding their real nature of normalization, segregation and domination” (Bordieu, 2011, as cited in Bispo, 2018, p. 32), and thus promote the transition of modern disciplined societies towards societies dominated by control. Driven by several social institutions, power structures inflict the submission of bodies, working to reduce their meaning to the point of being manipulated and obedient (Foucault, 1979), thus normalising all subjective and body diversity in a fanciful stereotyped image of validation and acceptance. This is the same idealised image that feeds fashion, beauty and related industries, corroborating the current social state of intense consumerism (Featherstone et al., 1991, as cited in Nóbrega, 2001) as an effect of neoliberal biopolitical regulations that attribute the responsibility of a “perfected” body to the surveilled self (Rose, 2000, 2001, as cited in McLaughlin & Coleman-Fountain, 2014), considering Foucault’s (1979) idea of surveillance as the disciplinary power that aims at controlling and normalising individuals. Intimately involved in the above is “medicine’s authority in informing the belief that certain body types and persons fall outside measures of normality, categorising ‘different’ bodies as disabled and undesirable and offering up treatments for their difference” (McLaughlin & Coleman-Fountain, 2014, p. 77).

This negative differentiation produces the stigmatisation over non-normative bodies, which, in turn, reveal a deviation from the image stereotype by breaking the limiting semantic constructions of “healthy”, “productive”, “right” attributed to “perfect bodies” (Shildrick, 2005, as cited in McLaughlin & Coleman-Fountain, 2014). This confrontation also exposes the strategies led by modernist fantasies of hiding the divergent autonomous body, as a possibility of existence for all, inside the idea of “imperfect bodies” that need to be fixed (McLaughlin & Coleman-Fountain, 2014).

The power discourse in mass society is instantiated in a wide range of social sectors. In the Design field, users whose needs and experiences differ from those of standard users are referred to as extreme-users. By being out of range in experience demands, their participation in design processes frequently leverages innovations in the field, as a result of displaying latent needs (Raviselvam, 2021).

The Indistinction and Autonomy of Body and Object: Design as a Tool for Empowerment

Like coercive regulations of bodies, design processes promote selection criteria in the shape of dualisms, such as “perfect/imperfect”, under which products are manufactured as clones of

a “perfect” original, preventing the design of “products where imperfect material surfaces are regarded as contributing to rather than detracting from product value” (Pedgley et al., 2018, p. 21). Subject to analogous constraining regulations to achieve “perfection”, bodies and objects manifest an intricate cultural relationship of “subject/object”. However, this differs from the “subject/object” relationship implied by discursive power in which the subject (economy, media and industry interests, imagery driven by elite interests) aims to mirror and restrain the object (individual and social subjectivities in which world perception is performed by the body) (Haraway, 2004). Largely similar to the philosophical idea of mind and body being indistinct (Merleau-Ponty, 1945), the semantic relationship established between our bodies and the desires and absences we project onto objects may potentially help us to understand the operating system behind the power structures we have been coerced by. It may also lead to ways of breaking the bonds of these domination mechanisms by counteracting them, using similar means of power.

According to Butler (2021), “power is not bad. Domination must be opposed. What powerful ways can we find to oppose domination?” (p. 1). Considering that coercive power practices lean on dualisms (Haraway, 2004), those located in the systemic binary categories are in a definite relationship in which the definition of meaning (Canguilhem, 2012; apud McLaughlin & Coleman-Fountain, 2014) is established by mirroring the dominating one into the other which, in turn,

holds the future, [...] which gives the lie to the autonomy of the self. To be One is to be autonomous, to be powerful, to be God; but to be One is to be an illusion, and so to be involved in a dialectic of apocalypse with the other. Yet to be other is to be multiple, without clear boundary, frayed, insubstantial. (Haraway, 2004, p. 35)

If we go back to the idea that our bodies are objects of representation and probably the least biological feature we hold (Alferes, 1987), they can be understood as “maps of power and identity” (Haraway, 2004, p. 38) and performed politically. Taking our bodies as social constructs, the collapse of the recognizable imagery shaped by power structures “can void this sense of surety and make us question what we assume about the body. What potential for transformation [...] or dissolution could our human bodies hold?” (Howell, 2014, p. 1). The evidence of gender, capability, sexuality and other attributes as social constructs adds to the notion that our bodies do not end at the limits of our skins (Haraway, 2004).

In this sense, the technology-related transdisciplinary field of Design can be a tool to encourage empowerment in stigmatised bodies. Donna Haraway’s cyborg imagery analogy, in which technology is seen as a possible tool to defy the domination dualisms, reveals the disruption of the power discourse in the blurred relationship between human and machine. This is powerful for political language in particular, once the obliteration of rigid distinctions between organic and machine systems break the matrices of domination that sustain the western subject (Haraway, 2004) as a constrained body.

Our sense of subjective physical bonding with artificial artefacts is nothing new, as we can see from the experiences of hybridi-

zation between people with functional diversity and artificial mechanisms. Be it in the imagination or in physical materiality, exploring bodily boundaries, social order and artificial artefacts we design may lead us to empowerment. Machines and design artefacts, such as prosthetic devices or even human-perception augmentation tools, may be friendly constituent parts of the subject (Haraway, 2004) and, therefore, of the body.

Extreme Users in Participatory and Co-design Processes

Over the last ten years of project and programme design and briefings, we have diversified the approach by adapting to the context — cultural, social, economic and emotional — and the methodologies according to the brief, such as project timeframe, typology of extreme-users involved and objectives. These were essential parameters guiding the redefinition of a strategy to meet the needs and expectations of those involved in the design process. However, as Sanders and Stappers (2008, p. 6) mention, “opinions about who should be involved in these collective acts of creativity, when, and in what role vary widely” and perhaps this is the reason why it is very difficult to validate a basic model for co-creative and/or participatory projects.

The involvement of extreme users in design projects can be considered using several methodologies. First of all, it is necessary to point out that extreme-users in design can be directly related to exclusion factors, which occur when the requirements for using a product in a given environment exceed the user’s capabilities and skills (Clarkson, 2007).

In her Ph.D. thesis Raviselvam writes:

With the term extreme-user referring to a specific user group, extreme-user experiences refer to the perspectives and needs that are inspired by the extreme-user interactions with a PSS¹. The difference in terminology serves to distinguish that applying extreme-user experiences is different from engaging the extreme-users. The latter directly involves extreme-users but the former helps designers to design for the extremes that are not accommodated by their designs. (2021, p. 14)

We understand that the starting point cannot be the justification for the participation of extreme-users (or to apply the consultation to diverse user profiles) in a design project, as this is no longer a discussion that deserves further exploration in this document. We intend to understand the appropriate timing for this involvement, to establish parameters for exercising a creative cross-fertilisation between designers and companies in a co-creative process, and how the collaboration of participants with different expectations can generate comfort/discomfort and satisfaction/unpleasantness at the end of the project. The management of expectations is currently one of the most important factors to consider. It is necessary to establish parameters for collective creativity, in an aesthetic, functional and emotional democratising exercise in co-creation, as indicated by Sanders & Stappers:

By co-design we indicate collective creativity as it is applied across the whole span of a design process, [...]. Thus, co-design is a specific instance of co-creation. Co-design refers, for some people, to the collective creativity of collaborating designers. We use co-design in a broader sense to refer to the creativity of designers and people not trained in design working together in the design development process. (2008, p. 69)

In participative projects, the methodologies of which involve extreme-users, there is a sense of enhancing them, placing them as specialists in a specific subject in a new perception of the relationship with the world and the artefacts. At this extreme, we find a rationale that links the diverse body to the perception of a world with meanings and functionalities that are translated into objects and artefacts.

By experience, these approaches have often served either to destigmatize, destroy prejudices and preconceptions among teams, or to make extreme-users understand project constraints. Furthermore, it became clear that design boundaries are often manipulated by political and economic interests, and that design limitations are beyond the control of project teams, which is why the “expectation” factor is so prominent in this subject.

Designing with extreme-users showed us an exponential number of possibilities to understand that design tools are not only reflected in the materialisation of ideas, but rather in the design of strategies that invest in “human capital” (Fuad-Luke, 2013) as a contribution to collective social growth. Following this principle, we state that the collaborative and co-creational work with extreme-users Creative Social Activism, considering the use of design methodologies and tools for the promotion of humanism applied to the healthy relationship among humans and of humans with the environment and artefacts they design.

More than designing, extreme-user engagement sessions have assigned greater meaning and purpose to the activity of design, generating empathy for the other’s contribution. Symbiotically, empowering extreme-users causes a sense of reciprocal empowerment.

The following two design projects can be taken as instances in which the active participation of extreme-users in co-participatory design processes expanded the boundaries of innovative outcomes towards inclusivity. The *Hinamatsuri Project* (2014) brought together the creative ideas of designers, craftspeople and young people with special educational needs in a co-design process across international borders between Portugal and Japan Fig. 1.

Together, they re-imagined and re-interpreted the Doll’s Festival from their own international and outsider’s point of view. In the process, and through their interpretations, they saw their drawings materialised by designers and craftspeople. As a result, they have linked contemporary design, social enterprise and inclusivity to an old and respected Japanese tradition.

In a distinct methodological approach and context, *RitaRed-Shoes* (2015) was a semestral academic project of the Graduate programme in Industrial and Product Design at the University of

Porto. Developed in partnership with the shoe manufacturer Klaveness, Associação Sorriso da Rita, Centro Paralisia Cerebral de Coimbra and Sheffield Hallam University, the project's main goal was to design an orthopaedic shoe collection for people with cerebral palsy, having them co-participate in the design process Fig. 2.



Fig. 1
Hinamatsuri Project.
Project Director & Curator: Julia Cassim; Lead Designer: Portugal Lúgia Lopes; Co-participatory design process: Vera Souschek drawing © Author's collection.



Fig. 2
RitaRedShoes Project.
Industrial Design Unit Lead Professor: Lúgia Lopes; Co-creation and participation of people with cerebral palsy in a design workshop with students © Author's collection.

Conclusion

The inclusion of extreme-users in design projects is beneficial for revealing the importance of reflecting critically on the practices that have been adopted over the years both at the educational and professional levels. We conclude that the empowerment given to extreme-users in design projects, is returned to the designers by symbiosis.

Inclusive Design supports and enhances decision-making in projects that are intended to be multidisciplinary, and brings us closer to the

loaded question of whether design can change society, raising the concern if we are going beyond the scope of what design can actually achieve. The answer depends on what we understand as change and what demands arise with this understanding. A likely, if quick, answer: society changes design rather than the other way around. Design does indeed profoundly influence and change day-to-day life in society, but how deep the changes go and can reach remains a matter of debate. (Bonsiepe, 2021, p. 307)

Bonsiepe (2021) understands that there are three reasons why design is expected to change society: the “myth of creativity”; the “dimension of the future”; and the utopian idea that “change equals improvement” (p. 307). For design to differentiate itself by positive contamination in society, it will have to adopt strategies of acceptance of diversity rather than manipulation even though we are aware that “users’ needs, influenced by their heterogeneous preferences and aspirations, are dynamic rather than static. The contradiction between the difference/diversity of users (capabilities and needs) and the unity of design thus creates an inherent paradox” (Li & Dong, 2021, p. 3).

The semantic and material merging with artefacts may just be expanding to the extent technology seeks to improve human features. However, there needs to be a careful awareness of how we can use this tool promoting empowerment. If we frame this discussion into the context of extreme-users in co-participatory design processes, it will carry the potential to disrupt artefact stereotypes for diversity inclusion. This relates to holistic design processes that do not stigmatise or exclude distinctive needs. In this perspective, we stand by Design as a material (object) and social (subject) phenomenon able to operate their tools in the paradigm change regarding the hegemonic domination discourses.

Fig. 3 displays the parallelism between body sociology (subject) and design semiotics (object), the subjective definition of body imperfection and artefact imperfection, and how design can work as a driving tool to encourage and enhance the empowerment of dissident and non-normative bodies and artefacts.

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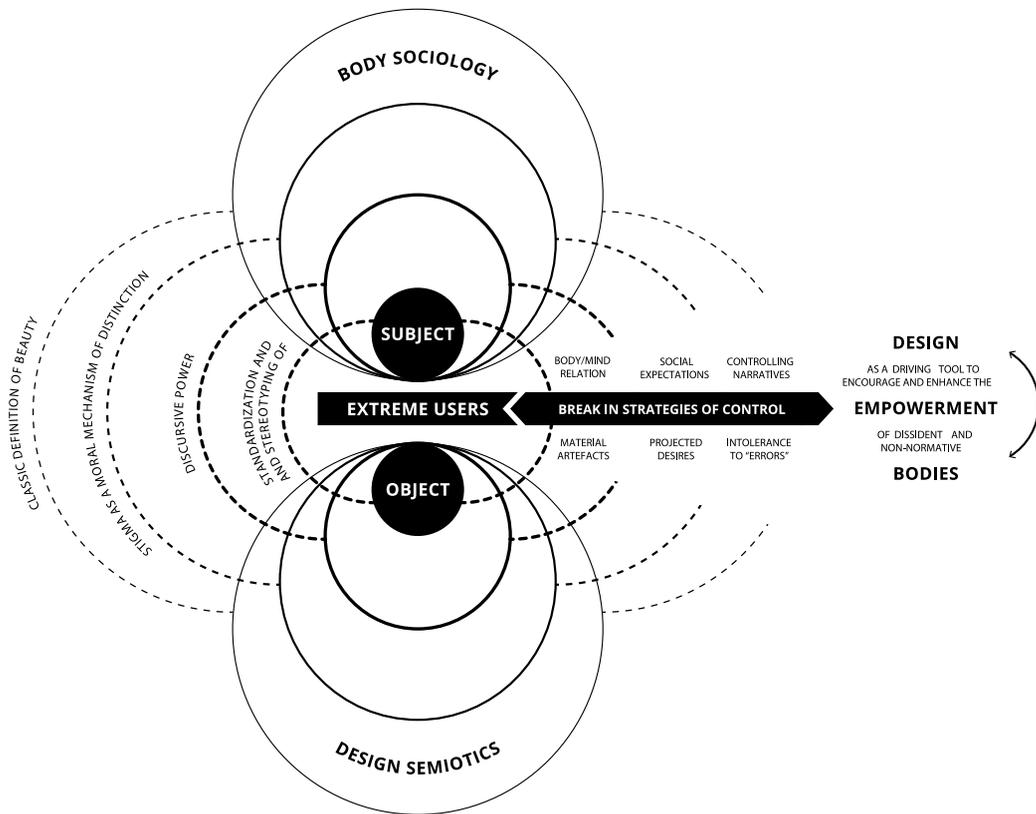


Fig. 3
 Conceptual framework
 of the phenomenon of
 empowerment in co-par-
 ticipative design pro-
 cesses with extreme-us-
 ers, by the Authors.

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