

RE-POLITICISING PARTICIPATORY DESIGN: WHAT CAN WE LEARN FROM *FAIRPHONE*

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Abstract

This exploratory paper is a contribution to the discussion of the re-politisation of Participatory Design. After a brief introduction of this Scandinavian design tradition, the Fairphone, a sustainable and fair mobile phone, is introduced as a case to rethink design as politics. Concern for planetary destruction, as a result of climate change, motivates the discussion of Tony Fry's notion of redirective design in the analysis of the Fairphone. Is the Fairphone just 'less bad' or is it paradigmatic example of an alternative technological vision? There are many lessons to be learned from Fairphone, not just by Participatory Design. Most importantly, Fairphone shows the importance of relating the things we help design to futures that become possible or impossible. Participatory Design, with its focus on democratic practices and 'having a say', needs to find ways to bring the voices of future generations into today's design practices.

1 Introduction

“Design is politics by other means”
– Randi Markussen, 1996

Science, technology, and design have all been described as doing the work of politics (Fry, 2009, 2011; Latour, 1987; Markussen, 1996; Winner, 1980). Participatory Design is one of the design methodologies that has taken the understanding of *design is politics* quite literally. Participatory Design, as a methodology for participatory technology design, has its roots in Scandinavia in the 1970s. It began in Oslo with a cooperation between the Norwegian Iron and Metal Workers trade union and the Norwegian Computing Centre (1970 - 1973) (Ehn & Kyng, 1987). The union's goal was to implement educational activities in the local union clubs in order to create knowledge that would support the workers' interests when contributing to the design of computer-based planning and control systems in the workplace. The project started as a rather traditional, top-down research project. In order to succeed, a new strategy was developed; the new focal points were the local unions, with the researchers playing a supportive role. Local knowledge on control, planning, and data processing informed a new textbook, produced by the researchers and local unions (Nygaard, 1974). Most importantly, the project resulted in one of the first data agreements, which regulates the development and introduction of computer systems. This agreement then informed national data agreements in Norway, Denmark, and Sweden.

Today's guiding principles of the Scandinavian Participatory Design tradition come forth out of the pioneering projects of the 1970s and 80s. Kensing and Greenbaum (2012) describe these as equalising power relations, democratic practices, situation-based actions, mutual learning, tools and techniques, and alternative visions about technology. Participatory

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Design has also broadened its reach and scope: it is engaged in public spheres and every day life (e.g. Björgvinsson, Ehn, & Hillgren, 2012) and is a globally known design methodology applied in many different areas, such as urban planning, architecture, and sustainable design.

Through the years, there has also been critical voices. Eevi Beck's (2002) critique focused on the de-politisation of the meaning of participation, which sometimes became outright exploitative and instrumental (Keinonen, 2010; Shapiro, 2010). Recently there has been more calls for a re-politisation of Participatory Design (Bergvall-Kåreborn & Ståhlbrost, 2008; Iversen, Halskov, & Leong, 2012; Steen, 2013). In this exploratory paper I will look into such a re-politisation based on Tony Fry's (2008) design perspective, Design Futuring, with a focus on his notion of *design as redirective practice*. In this paper I will present a recent example of a redirective design, the *Fairphone*, a mobile phone designed on principles of fairness and sustainability.

The Fairphone project started with a vision about the future, not with a commitment to a particular design approach. The project is located in the field of Design Thinking (Brown, 2009) and social innovation (Murray, Caulier-Grice, & Mulgan, 2010). Its design approach and methodology seems a mix of an Open Design perspective (van Abel, Evers, Klaassen, & Troxler, 2011) based on open design principles (Mister Jalopy, 2005), Design Futuring (Fry, 2009), and Participatory Design (Simonsen & Robertson, 2012). In the project, design is perceived as a process for radical change in the way we develop, produce, and consume goods. The Fairphone is a critical and maybe even paradigmatic case (Flyvbjerg, 2006): it is *strategically important* to the general problem of unsustainable design, production, and consumption, and, although it is still early to decide, it may have *prototypical value*. The Fairphone case can inform design research and practices in many different ways. This paper focuses on one particular question: What can the Fairphone case tell us about re-politicising Participatory Design.

2 Participation is Not Everything

“[Our] ability to sustain ourselves over time depends on an ethical turn towards an ethics materially embodied as the performative qualities of the things of the world we make.”

– Tony Fry (2012)

Participatory Design started out as a design methodology based on the political and ethical stance that workers have the right to *have a say* in the design process of a technology that will affect their work life and skills (Bjerknes & Bratteteig, 1995; Bratteteig, Bødker, Dittrich, Mogensen, & Simonsen, 2012). After Participatory Design moved out of the workplace and into society in general, this ethical stance broadened into the recognition of “an accountability of design to the worlds it creates and the lives of those who inhabit them” (Simonsen & Robertson, 2012, p. 5). In many of today's Participatory Design practices, this idea of world-making is mostly confined to local problem situations, without analysis of the larger political-economic context. The technology design no longer plays the role of *tool* (Ehn & Kyng, 1985) in collective struggles for empowerment and life improvement. We have all become IT consumers. This has also changed the conditions for Participatory Design projects. Participants, such as workers, nurses, patients or children, are more skilled and bring more informed needs and ideas into the design process. This supports and strengthens Participatory Design's guiding principles, such as democratic practices, situation-based action, and mutual learning, and results in many interesting and productive participatory design projects. As a result, the focus of design researchers is more on fine-tuning

participatory practices, method development, and on what kind of use becomes possible, then on the larger political context in which the designed solution is developed, produced, and used.

The fact that this context moves to the background, or becomes invisible all together, is also the effect of the democratic practices employed during the design process. Moral values are often not *front-loaded* (Hoven, 2007), but need to emerge during the design process in order to be taken into consideration in the design (Halloran, Hornecker, Stringer, Harris, & Fitzpatrick, 2009; Iversen et al., 2012). Moral values such as fairness and sustainability may therefore play no role in the design specifications, even if these values are generally considered important to the participants.

2.1 The Common Good

In the introduction to *Design as Politics*, Tony Fry makes a rather stark statement: “Democracy (in its difference) has de-legitimized the voice of the 'common good' and abandoned the development of conditions able to create a social ethos” (2012, p.8). Fry argues that in the “developed 'democratic world', [democracy] has generated into televisualized 'consumer democracy” (ibid.). Participatory Design, because of its guiding principles, could be a counter force to *consumer democracy*, but it doesn't have specific guiding principles that will guarantee the strengthening of the voice of the *common good*.

Participatory design researchers Guro Bjerknes and Tone Bratteteig (1995) pointed to this in their discussion of the evolution of participatory design projects from the 1970s to the early 1990s. They correlated where a project started, in the organisation (or society) as a whole or in special interest groups, with the project's strategy for change: does a project use existing institutions (e.g. legislation or trade unions) or is the focus on acting in the local situation (emphasising participants' knowledge and skill) (ibid., p. 82-6). They observed a shift in focus in Participatory Design in the 1980s, from a more political design project to an ethical design approach. This had also consequences for the role of the design researcher, who started out as an emancipator in a collective political process, but became a facilitator of his/her own individual ethical responsibility, which might or might not be supportive of a larger political programme.

Even if Participatory Design could strengthen its emancipatory role in collective political processes, its influence could be limited. Fry argues that democratic design “depends to a large degree on socio-political orders in which democracy has currency” (2009, p. 10). This may especially be true for the Scandinavian Participatory Design tradition. Already in the early years, the portability of Participatory Design to the US context was questioned (Greenbaum, 1993). Ten years later, Eevi Beck asked if Participatory Design was outdated in Scandinavia (2002). She referred to Bjerknes and Bratteteig's (1995) concern that Participatory design lost its broad view and to Stolterman's (1995) critique that Participatory Design has become too focused on improving the practices of designers. Beck calls for a more politicised agenda:

A politicised agenda a for PD would need to centrally address, then, the legitimacy of anyone not only to propose solutions, but to suggest what the problems are. What are the agendas for research, and who gets to influence them? They connect to the deep question of what politics is considered to be (p. 83).

Beck proposes a renewed focus on power - on patterns of dominance, because participation in itself is not enough: the political project called Participatory Design needs to “counter the reproduction of marginalisation by information technology” (ibid., p. 89).

The political agenda for design, as suggested by Beck and Fry, entails more than a *front-loading* of moral and social values in the design process. How we think about design, and consequently about the role of the designer and the designed, has to change. In the context of the ongoing planetary destruction as a result of climate change, several ways to rethink design have been proposed, such as metadesign (Wood, 2007), sustainable interaction design (Blevis, 2007), and Design Futuring (Fry, 2009).

2.2 Design as Redirective Practice

The understanding of design as creating worlds, not things-in-itself (Bjögvinsson, Ehn, & Hillgren, 2012; Fry, 2009; Simonsen & Robertson, 2012), refers to a more relational understanding of design. The design practice can be understood as a process of becoming (van der Velden, 2009) – the meaning and matter of design, designer, and the designed emerge in the encounter with each other. In the design process, people and things don't interact – they don't meet each other as entities given in advance that come together in an exchange. The characteristics, properties, and meanings of design, designer, and designed emerge in their *intra-actions* with each other and other people and things (Barad, 2003; Suchman, 2007).

The result of a particular design practice is an emergent, not final, iteration of the design. Such a design is not determinate, nor is everything possible. As the design becomes part of new networks or ecologies, new intra-actions take place, and new iterations of the design emerge. Intra-actions open up new possibilities, “as others that might have been possible are now excluded: possibilities are reconfigured and reconfiguring” (Barad, 2007, pp. 234–235). This understanding of design brings out the accountability of the designer in each iteration of the design. “This is not a 'cause and effect' kind of responsibility, but a responsibility for the material entanglements we help to enact” (van der Velden & Mörtberg, 2012, p. 679).

This relational understanding of design positions the designer as an ethical subject. The question thus becomes: how to intervene in the ongoing design practices that produce unfair and unsustainable designs? Besides the design perspectives mentioned above, there have also been calls to *undesigned design* (Brigham & Introna, 2007; Pierce, 2012; van der Velden, 2010) and to *redirect design* (Fry, 2009). Fry argues that we need to redirect our design practices towards *sustainment*, to that what keeps us in existence. This requires the relational understanding of design as outlined above, because it helps us to understand that in each iteration of a design, we both create and destroy (ibid.). Conventional *green* or *sustainable* design projects may result in more environmental design, but “'less bad' is no good” (McDonough & Braungart, 2002, pp. 45–67). We need to understand who or what destroys – this includes ourselves as designers and users – and that what is destroyed, in order to work towards change through redirective design practices.

Fry discusses two key redirective design strategies, *elimination design* and *recoding*. Elimination design is based on identifying unsustainable products and the redirective practices that will change them or that will eliminate them completely. Fry presents six possible strategies to promote our thinking about *elimination design* (p. 76-80):

- **Erasure of 'need' by exposing it as a fabricated want:** Many of our needs are in fact created wants. A new normative model, based on the pleasure and virtue of a living a simple and moderate life is the only way to continue.
- **Functional substitution:** the replacement of high impact technology by low impact alternative.
- **Product multipurposing:** Design can materially transform single function technologies.

- **De-materialization and re-materialization:** De-materialisation is design that eliminates the use of certain materials, while re-materialisation is the substitution of human labour for machines in a smart way.
- **Symbolic devaluation and the destruction of sign value:** Sign value (brands) of products (and perceptions, values, behaviours, and attitudes) can be purposely undermined (see also Recoding)
- **Prohibition:** The use of laws and regulations to ban the existence and use of unsustainable products, practices, and services.

Recoding is about de-signing, re-signing or the transformation of the sign value of things (objects, images, structures, spaces, services, and organisations) (Fry, 2009, p. 81-89). Through recoding, things get a different meaning or lose their existing meaning. An example of elimination design and recoding are Adbusters' Blackspot shoes. For example, the *Blackspot Sneaker* (Figure 1) is a functional substitution and re-materialisation of *Nike's Converse* as it offers a low-impact and worker-friendly alternative to what were considered "sweatshop-produced sneakers" (Wikipedia, 2014b) (Figure 2). The *Blackspot* itself, a hand-drawn anti-logo, is a recoding of the *Swoosh*, the Nike logo (Adbusters, 2014) (Figure 3).



Figure 1: Blackspot Sneaker



Figure 2: Rematerialisation



Figure 3: Recoding

3. Fairphone: "A seriously cool smartphone that puts social values first"

The mobile phone is one of the most prolific digital technologies and the design of mobile applications is the fastest growing digital design sector (mobiThinking, n.d.). The largest app-stores, Apple App Store and Google Play, have each close to a million apps available for download. In 2013, an estimated 100 billion apps were downloaded, forming a huge incentive to designing more apps and more powerful mobile technology. In 2013, the average lifetime of a mobile phone was 18 months in the USA and 29 months in the UK (Tran, 2013).

The focus on applications and content has taken the attention away from the negative effects of mobile phone's production, use, and disposal. Some who do focus on these effects have formulated different solutions, such as refraining from designing mobile phones (Pierce, 2012) and sustainable interaction design of mobile phones (Huang & Truong, 2008). In this section I will explore the result of a redirective design of the mobile phone: the *Fairphone*.

The Fairphone started as a project of the *Waag Society* (www.waag.org) in Amsterdam, The Netherlands, and is since 2013 a social enterprise based in Amsterdam. The initial goal of the project was to produce a *fair* mobile phone; fair towards people working in the mines in DR Kongo that produce the minerals for the phone, i.e., non-conflict minerals, and fair

towards the factory workers producing the mobile phone. The Fairphone project emerged out of a constellation of activities that responded to the human rights and workers rights abuses in the mineral mines in DR Kongo and Indonesia and the East-Asian electronics industry, and illegal and unsustainable e-waste handling in Africa. For example, the documentary *Blood in the Mobile*, by Danish director Frank Paulsen, was released in 2010, relating the story of how the minerals mined for our mobile phones fuelled the ongoing civil war in Eastern DR Kongo. The film documents forced labour, child labour, armed conflict, corruption, and more. The year 2010 also saw massive labour unrest in China (Wikipedia, 2014a). Especially the worker suicides at the Foxconn electronics factory, 18 attempts left 14 workers dead, received wide-scale media attention (Guo, Hsu, Holton, & Jeong, 2012; Ngai & Chan, 2012). In 2008, the Dutch organisation *Time to Turn* (www.timetoturn.nl) launched a campaign for fair mobile phones. In 2009, the European coalition *makeITfair* (www.makeitfair.org), based in Amsterdam, published a report called *Fair Phones in the Netherlands: It is Your Call - How Dutch and European mobile network operators can improve responsibility for their supply chain* (*makeITfair*, 2009), which focused on the whole supply chain, from mining minerals to disposal. It concluded that there were no fair mobile phones on the market. In March 2010, the Fairphone project was launched by a coalition of non-profit organisations and two national telecommunication providers in the Netherlands, with Waag Society as project coordination and implementation site.

3.1 Fairphone Stories

Our Story. It's big, small and about you.

You can change the way products are made, starting with a single Phone. Together, we're opening up the Supply Chain, and redefining the Economy – one step at a time.

– Fairphone website

In the Fairphone project, the idea of what is a fair mobile phone soon expanded to include the whole life cycle, including end-of-life, of the mobile phone. Fair includes a people-first approach, fair and conflict-free resources, the use of recycled materials, e-waste solutions across the supply chain, fair technical and design specifications, and transparent pricing (for details see the Fairphone website). There are different ways to tell the story of the Fairphone. The following text, taken from the Fairphone website (2014), focuses on the role of the Fairphone as a tool to further collective political action and global changes:

Our smartphone is a practical starting point for telling the story of how our economy functions. Producing a phone lets us tackle the big questions and challenges we face from a human perspective. It's an everyday object that nearly everyone owns, uses or can identify with. It's both a tangible device and a great symbol of our connected, social world.

But the phone is not a solution in and of itself – it's simply a vehicle for change. We're revealing its story, understanding how it's made and producing an alternative. By buying this phone, you're reconfirming that collective action counts and becoming part of a community that has the power to fuel change."

Strong visions guide the Fairphone design, taking the Fairphone project beyond the design of a mobile phone and towards a new economic model, the *circular economy*, in which finite resources are captured and reused and plant-based materials can biodegrade into compost (Preston, 2012). The Fairphone website presents a roadmap to a fairer economy,

which consists of five components (Fairphone, 2014): Made with care, Smart design, Clear deals, Lasting value, and Precious materials¹ (see Figure 4). The Fairphone isn't 100% fair yet (van Abel, 2013), but the project's central value of transparency enables full insight in the supply chain as well as full pricing transparency (Wernink, 2013)(Figure 5). For example, the Fairphone website provides a photoblog from the production site in China (Mu, 2013), information about how they selected their production partner (Ansett, 2013a; Ballester, 2013), and information on the wages and working conditions of the factory workers in China (Ansett, 2013b).



Figure 4: Roadmap to a fairer economy

Figure 5: Cost breakdown of first Fairphone

A second way to tell the story is from a design perspective. The Fairphone design process is entangled with all other aspects of the development of the mobile phone. As 80% of a product's environmental impact is determined at the concept and design phase (Action and Research Centre, 2013), the whole process took place concurrently, and intra-actively, with four design objectives for a circular product economy: designing for longevity, designing for service, designing for re-use in manufacturing, and designing for material recovery (Chitenden, 2013). The design process brought together a large, diverse, and multidisciplinary group of participants, consisting of activist and non-profit organisations, factory workers, factory owners, miners, programmers, interaction designers, legal experts, graphic designers, material experts, investors, telecom operators, and more. At a later stage they were joined by 25.000 fair technology supporters who paid in advance in order to bring the first edition of the Fairphone into production. The design process also included trips to DR Kongo (minerals), China (production), Ghana (e-waste); and a bootcamp organised in Amsterdam from May 30 – June 1, 2013, in which an international group of participants took up three design challenges for a fair phone (for results, see Waag Society & Fairphone, 2013):

1. *DIY (Do-It-Yourself) fair phone*: What is the role of end-users if they can locally produce their own phone? And what does this mean for the design?
2. *A fair phone that lasts*: How can you make mobiles phones more sustainable in use, re-use and recycling?
3. *A fair phone that feels fair*: How can you let the user experience that a phone is open and fair? What does this mobile phone look like? How do people interact with it and what do they experience?

1 Unlike many other mobile phone producers who wanted to get rid of conflict minerals, and who moved their business to other countries, Fairphone decided to buy the minerals from DR Congo: "Fairphone's decision to work in Congo, on the other hand, comes from the vision to source from areas that need our continued economic support. Fairphone wants to work in these areas where we can work to improve and contribute to the situation – we want to change rather than avoid these issues in conflict areas" (Ballester, 2013).

Another way to tell the Fairphone story is from a specification perspective, the set of technical requirements that inform the design of the first Fairphone. After all, the Fairphone isn't only “a vehicle for change”, it is also aiming to be a “seriously cool smartphone”: it has to fulfil the expectations of a smartphone. The design of the mobile phone itself (hardware) was an already existing design. This may be the reason the Fairphone looks like any other smartphone, but there are some significant differences:

- the body of the phone is made out of post-consumer *recycled polycarbonate*, retrieved from old devices;
- it contains *non-conflict* minerals
- the phone comes *without a headset or charger*, because most people already have those;
- it has *dual SIM*, so people don't need two phones in order to separate their work communication from private communication;
- the free/open source operating system gives *root access*;
- it has a *removable* battery;
- it can be *opened up and is repairable* (spare parts and repair manual are available); and lastly
- it is shipped in *minimal and sustainable packaging*.

3.2 The Fairphone as a redirective mobile phone design

One of the problems with the ‘greener gadgets’ version of sustainable design is that the result is mostly still more stuff – hopefully less harmful stuff, but rarely just less stuff. Is it possible to use the practice of designing to eliminate stuff?
(Tonkinwise, 2012)

Tony Fry's (2009) *Design Futuring* is about creating a future through design. When design is understood as world-making, thus incorporating in its frame of reference the social, cultural, economical, political, and environmental, it can be at the *frontline of transformative action*. How transformative is the Fairphone? Is it a redirective mobile phone design or just *less bad*? In this section I will look at the Fairphone using Fry's key redirective practices: *elimination design* and *recoding*.

Elimination design is about replacing an unsustainable design by a sustainable design (e.g. replacing a gasoline-guzzling lawnmower by a hand-mower), or, more radically, by changing the unsustainable context (e.g. replacing the lawn by vegetable garden and natural growth and use the hand-mower when needed) (Fry, 2009, p. 74). The Fairphone is taking the more radical option. It replaces the unfair and unsustainable mobile phone with a fair phone; it changes the unfair and unsustainable context in which the mobile phone is produced and works towards changing the unsustainable economic model that sustains unfair and unsustainable practices. In this comparison, the only difference is the carbon foot print of *use*; using the hand-mower significantly changes the carbon footprint of use, the Fairphone seems to have no effect on the carbon footprint of mobile phone use (Berners-Lee, 2010).

The transformative design of the Fairphone becomes more clear in the context of the more detailed approaches found within elimination design (see Table 1)²:

² For description of approaches, see Section 2.2.

Table 1: Fairphone and Elimination Design (based on Fry, 2009)

Design for elimination	Fairphone
Erasure of <i>need</i> and <i>want</i>	Dual SIM function will diminish the need for two phones. Creation of new values, such as fair, transparency, and ensoulment (Blevins & Stolterman, 2007), erases the <i>want</i> to replace a working mobile phone with the latest new model.
Functional substitution	Substitution of the unfair mobile phone with a fair phone.
Product multi-purposing	The Fairphone comes always unlocked, one doesn't require to buy a new phone when switching telecom provider.
De-materialisation and Re-materialisation	<i>Dematerialisation</i> : No conflict minerals; no headset and charger; reduced package materials. <i>Rematerialization</i> : Conflict-free minerals; use of recycled, replaceable, and repairable materials.
Symbolic devaluation	No – but <i>symbolic revaluation</i> through ensoulment (see Section 3.3)
Prohibition	Fairphone is working closely with other organisations in regulating the use of conflict minerals in electronics. It support a possible European Law on responsible sourcing in conflict areas (Gerritsen, 2013).
Recoding	Fairphone
Transformation of the sign value	The mobile phone as a performance of longevity, re-use, recyclability, and sustainment and as vehicle for a new economic system (circular economy). The buyer of Fairphone gets more than a mobile phone, s/he become an investor in a more sustainable future.

The Fairphone, even if it's not yet 100% fair, is part of a redirective action towards changing the ways we design and produce technology. In this process, in the intra-active becoming of the Fairphone, the design process transforms and becomes a collective political platform towards a new economic system. The designed, the Fairphone, has come to represent the opposite of what is common for mobile phones in the post-industrial economies: its is fully open, fully owned by the buyer, and it is designed for longevity and repairability. The role of the designer also transforms, from being an ethical subject as facilitator, implementing a personal political programme (or not), to an ethical subject as emancipator in a collective political process. This became also visible during the Fairphone Bootcamp for the fair phone of the future, in which the designer-participants developed their own list with guidelines (see Figure 6) and a Fairware roadmap, which maps the road from the Fairphone to a circular economy (Mier, 2013).

Also the future users of the designed, the Fairphone user, transform and are transformed in this intra-active process. The future user becomes part of the design process: first by participating in the crowd-sourcing process that made the production of the first 25.000 Fairphones possible and later by participating in design workshops, bootcamp, Fairphone design discussion forums, and commenting on Fairphone's blog posts. The user as owner becomes also an activist investor in activities towards a more sustainable economic system through financial contributions (see Figure 5) to a worker welfare fund and e-waste solutions.

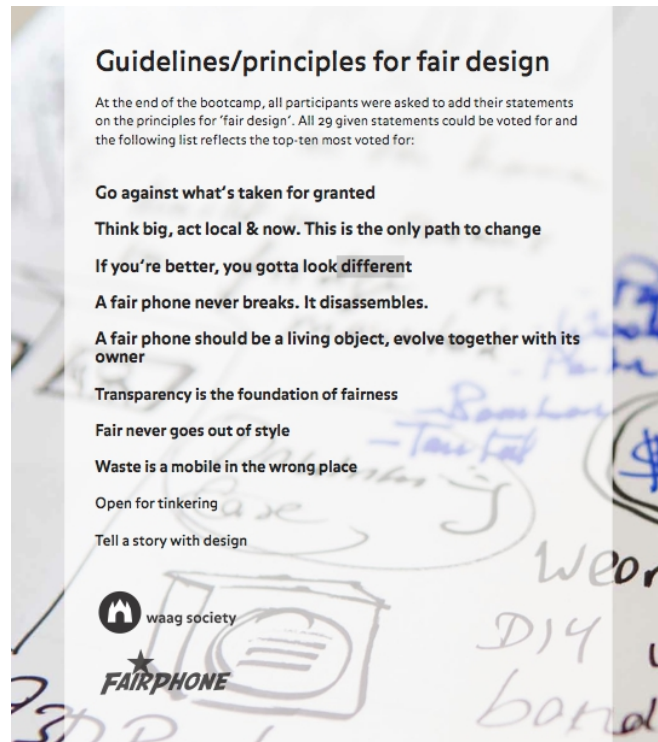


Figure 6: Guidelines for a fair design

3.3 Ensoulment

One of the *Guidelines/principles for fair design* (Figure 6) is: “A fair phone should be a living object, evolve together with its owner”. This can be understood as a reference to what Nelson and Stolterman (2003) call *ensoulment*: “Ensouled things imply well-cared for things, looked-after things, durable and enduring things” (Bleviss & Stolterman, 2007). Odom et al. (2009) find that a thing's function and symbolism, material qualities as well as relational qualities, such as engagement, histories, augmentation, and perceived durability, are the main design factors that give it ensoulment.

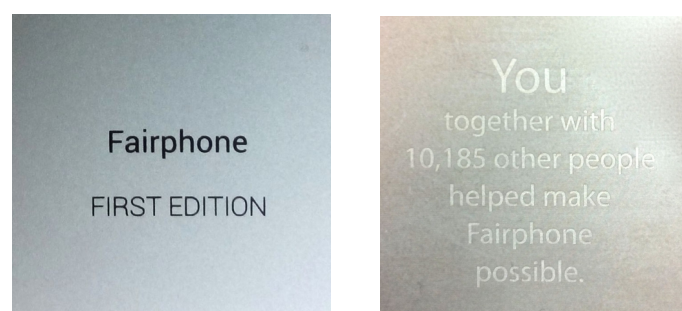


Figure 7: Ensoulment through augmentation

The Fairphone case shows that *ensoulment* can also be understood as part of a redirective practice. Especially the *material qualities* of the Fairphone (e.g., non-conflict minerals, recycled plastic, technical specifications) and *augmentation*, through inscriptions on the back (picture on the left) and inside the Fairphone (picture on the right) (see Figure 7), further the ensoulment of the Fairphone. Through ensoulment, the Fairphone is symbolically revaluated, which may promote its longevity.

4 Re-politicising Participatory Design

The story of Fairphone is reminiscent of Participatory Design projects of the 1970s and 80s. Fairphone implements Participatory Design's guiding principles within the larger collective frame of *design futuring* (Fry, 2009). The Fairphone project is about designing an alternative vision of technology, of working towards a fair and sustainable future in today's unsustainable economic system. Not only do workers, designers, and users participate in the project, also future generations have a voice through this concern for the future.

In a Participatory Design context, we could say that Fairphone has taken the global economic system as its *local problem situation* (Bratteteig et al., 2012) and uses both existing institutions, such as workers organisations, non-governmental organisations, and regulation, a diverse body of participants (interest groups, communities), as well as a mobile phone to reach its goals. In this process, the Fairphone itself is both a *tool* for change as well as an end in itself.

What can we learn from Fairphone in the context of re-politicising Participatory Design? First of all, Fairphone shows how the ideology of the early Scandinavian Participatory Design tradition of the 1970s and 80s, with its political and institutional/systemic perspective and collective approach, is still relevant in the 21st century, even if many of the conditions have changed. Most early Participatory Design projects included unions and/or workers as partners in the project and they designed alternative technology visions as a response to the proposed technological solutions proposed by the management or owners of the workplace. Fairphone has a broader partnership, including individual activist users as well as representatives of large telecoms as participants in the design process (e.g. the Fairphone Bootcamp). Participation and partnership has broadened, not in a liberal democracy manner “de-legitimising the voice of the 'common good'” (Fry, 2009), but as a result of a vision of the common good, now and in the future, which transforms the role of design, designer, and designed.

Secondly, front-loading values. In order to take a multi-generational perspective in design - acknowledging that future generations will be affected by our design decisions – Fairphone showed that certain values needed to be front-loaded in the design process. Participatory Design, with its focus on participation and democracy, is called an ethical design methodology (Robertson & Wagner, 2012). Finding ways to bring the voices of future users into the design process is an important ethical challenge for Participatory Design. Front-loading values may also help focus the design process on needs, not wants.

Thirdly, design as redirective practice. The Fairphone project shows how elimination design and recoding can play an exploratory and strategic role in a design process. They bring the larger socio- and political-economic context in the design process and so elicit different values for design as well as mobilise a large community of participants. In a Participatory Design context, elimination design and recoding strategies can be used as interventions in 'design as usual' or they can function as practical guides for designing for longevity. Also symbolic revaluation, in the form of ensoulment, can result in designs with a longer lifetime.

Fourthly, transparency. In the Participatory Design literature, transparency hardly plays a role. It is sometimes mentioned as a desirable value of a design process (e.g. Binder & Brandt, 2008), but a discussion of its possible enabling and transformative role, as seen in the Fairphone project, is missing. Fairphone uses all social media, plus a website, mailing list, and discussion forums, to inform, to make visible, to learn, to design, and to build a community. As Fairphone shows, transparency is crucial on several levels: supply chain (materials and suppliers), financial, working life, and production planning. There are no hidden agendas or silent partners, no industry secrets or copyrighted designs. By making transparency central to our Participatory Design projects, we strengthen our democratic practices, while the political issues at stake, in terms of our choice and use of materials

(software, hardware), sustainability issues, ownership, empowerment, openness, become visible and material.

Lastly, crowd-sourcing. The result of Participatory Design projects are often prototypes that never become products because of lack of investment or funding (Culén, 2014). Crowd-sourcing can become a funding source for the participatory design and production of alternative technology visions.

5. Concluding Remarks

The re-politisation of Participatory Design, with its focus on democratic practices and 'having a say', is about finding ways to bring the voices of future generations into today's design practices. Even if we start out small, in a local problem situation, focusing on a particular interest group, we have to zoom out to include its socio-economical and environmental context in our frame of references. This will expose the networks and ecologies in which our design activities take place, which will enable participatory designers and other participants to understand the interconnectedness of the local problem situation. Secondly, we have to *front-load* certain values, such as open design, transparency, recyclability, longevity, and repairability in our projects, if we want the resulting designs to be fair and sustainable.

The Fairphone is an informative case for the re-politisation of Participatory Design, but it also shows how such political projects become quickly very complex and vulnerable. The Fairphone project grew into an ecology consisting of designers and project managers with a vision of a new economic model (the circular economy); communities, organisations and institutions working towards sustainable resourcing and a fair work life; new thinking about design; a functioning fair phone; and not the least 25.000 Fairphone owners. This gives the project strength, as it has a real impact as an alternative vision of design and technology. Now that the first edition of the Fairphone is shipped to its new owners, it will become part of new networks and ecologies. They will in their turn create new possibilities, which will reconfigure the Fairphone ecology – for good or for bad.

Finally, Donna Haraway wrote: “I will critically analyze, or 'deconstruct' only that which I love and only that in which I am deeply implicated” (Haraway, 1997, p. 151). Here is my disclosure: I am deeply implicated in *my* Fairphone. Our life together has just begun.

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