

# DEALING WITH UNCERTAINTIES IN SOCIALLY RESPONSIBLE DESIGN

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## ABSTRACT

In recent decades, a plethora of books and papers on socially responsible design has emerged. This literature, however, is far from having solved the environmental and social problems faced by the world today. This paper focuses on a major problem of socially responsible design initiatives, namely that, although they may have the best intentions, they often have minimal, if any, positive impact. A central reason for this is the uncertainties associated with the effects of such designs, which is also often used as an argument against initiating more ambitious projects. More specifically, sometimes we are unsure about what effects a socially responsible design will produce, and sometimes we are unsure or disagree about whether its effects are ethically sound, in particular, when they involve someone having to make sacrifices. To be able to choose a more ambitious path, we need to better understand the uncertainties associated with socially responsible designs and to reconsider the ethical assumptions guiding our choices. This issue is addressed by defining a framework for understanding uncertainties associated with such projects and by arguing for a consequentialist ethics to govern socially responsible design.

## INTRODUCTION

Victor Papanek (1971) was one of the first authors to address the social responsibility of (industrial) designers from an environmentalist perspective in the beginning of the 1970s. Since then a plethora of books and papers related to socially responsible design has emerged. Examples of design philosophies intended to improve the wellbeing of humans or the environment include design activism, design ethics, ecological design, environmental design, environmentally sustainable design, environmentally conscious design, emotionally durable design, ethical design, green design, nudging approaches, responsible design, social design, sustainable design, triple bottom line and welfare design. However, this literature is far from having solved the environmental and social problems the world faces today (e.g., Stegall 2006; Fuad-Luke 2007; IPCC 2014a; IPCC 2014b).

In recent decades, various socially responsible designs have been implemented. Many of these, however, have had minimal effect on a global scale, and some have even been questioned as to whether they are in fact doing more harm than good. Table 1 shows a small selection of the initiatives whose benefits have been questioned. It should be emphasized that it is not the purpose of the authors of this paper to assess whether these criticisms are justified or not.

As shown by the examples in Table 1, sometimes socially responsible designs fail to produce the intended effects and/or have unforeseen negative side effects. A central reason for this is the uncertainties associated with the effects of such designs, which is also often used as an argument against initiating more ambitious projects. On this basis, the paper raises the question:

*How can we understand and address uncertainties in socially responsible design?*

Table 1: Examples of critiques of socially responsible designs

Initiative	Promoted as	Critique of initiative
Urban agriculture	A means to reduce negative effects of food transportation.	Allocating metropolitan land to agriculture results in lower urban density levels, which results in longer commutes, which is far more energy intensive than food transportation (Glaeser, 2011).
Green roofs	A particularly convenient way of making buildings sustainable.	Rainwater runoff from green roofs transfers the pollutants seized by urban vegetation from the atmosphere to the surrounding environment (Speak et al., 2014).
Biofuel	A means to reduce need for fossil fuel and pollution.	The increase in the production of some types of biofuel may threaten biodiversity; some types of biofuels demand more fossil energy to produce than the fossil energy saved by using them (Pimental and Patzek, 2005; Groom et al., 2008).
Bio-degradable products	A means to reduce environmental impact of waste.	Biodegradable products may not be more environmentally friendly when disposed of in landfills because of the methane gas they release when they degrade (greenhouse effect) (Levis and Barlaz, 2011).
Vegan clothing	A means to minimize the need for (polluting) animals.	Vegan leather and faux fur creates toxic discharges that contaminate local air, water and soil; plastic-derived products are not fully biodegradable, leading to waste issues (McCutcheon, 2013).
Using less or more natural materials for packaging	A means of becoming more environmentally friendly.	Cutting back too much on packaging or using recycled material can result in damaged products during shipping because of smaller durability, which leads to wasted energy and natural resources; the production process for a paper shopping bag, compared to a standard plastic bag, demands more energy and water, and it releases more greenhouse gases (Porter, 2013).

## A FRAMEWORK FOR UNDERSTANDING UNCERTAINTIES IN SOCIALLY RESPONSIBLE DESIGN

Uncertainty in relation to socially responsible design pertains to both the actual effects (epistemic uncertainty) and the desirability of such effects (ethical uncertainty). In other words, sometimes we are unsure about what effects a socially responsible design will produce, and sometimes we are unsure or disagree about whether its effects are desirable, in particular, when they involve someone having to make sacrifices by having to pay for such solutions (e.g., through taxes) or by eliminating or minimizing certain activities (e.g., using public transportation instead of driving). To be able to choose a more ambitious path, we need to better understand the uncertainties associated with socially responsible designs and to reconsider the ethical assumptions guiding our choices. To facilitate an understanding of such uncertainties, this paper introduces three definitions.

The first definition concerns a distinction between focus and side effects, and one between direct and indirect effects. Focus effects refer to the effects that a solution aims to achieve, while side effects refer to other positive or negative effects. Direct effects refer to the actual effects of a solution, while indirect effects refer to the lost effects of another solution that the chosen solution takes the attention or resources away from. Using these two distinctions, four types of potential negative effects from well-intended socially responsible designs can be defined, as illustrated in Figure 1.

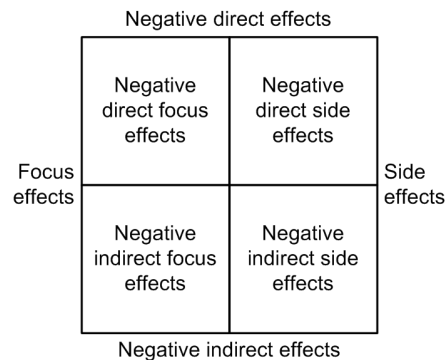


Figure 1: Types of negative effects of socially responsible initiatives

The four negative effect types shown in Figure 1 can be defined as:

- 1) Negative direct focus effects: Aiming to achieve an effect in one area, but eventually doing more harm than good in this area. For example, using more fossil energy to produce biofuel than the saved fossil energy as a result of using the biofuel.
- 2) Negative direct side effects: Aiming to achieve an effect in one area, but by doing so, doing harm in another area. For example, using less packaging material to save resources, but in effect causing more products to be damaged, and thereby wasting other types of resources, as well as causing troubles for individuals and companies.

- 3) Negative indirect focus effects: Aiming to achieve an effect in one area, but by doing so, blocking for more efficient initiatives in this area. For example, focusing on certain types of alternative energy sources at the expense of more efficient ones.
- 4) Negative indirect side effects: Aiming to achieve an effect in one area, but by doing so, blocking for initiatives in other areas more in need of attention. For example, every time funds are given to sustainable initiatives addressing one area, at least in principle, it is at the expense of using these funds on initiatives addressing other areas, which some may consider to be more important.

The second definition concerns the notion of risk, which may help us understand why initiatives that produce undesired effects are carried out. According to Hansson (2004), there is a tendency to use the concept of risk to denote any of the following: 1) an unwanted event that may or may not occur; 2) the cause of an unwanted event that may or may not occur; 3) the probability of an unwanted event that may or may not occur; 4) the statistical expectation value of unwanted events that may or may not occur; and 5) the fact that a decision is made under conditions of unknown probabilities. It is not the purpose of this paper to decide between each of these suggested usages that Hansson found in the literature, but it should be highlighted that risk, as it pertains to actions and their impact, can originate both in cases where the probabilities of different outcomes are known and in cases where they are not.

For any action that is carried out, there is always a chance that outcomes different from those expected might occur. Some of the causes for this will be within our range of knowledge (safe range of prediction) and/or control, but some will not be. Because of the probability that can be assigned to each of these outcomes, there is a risk connected with the action, namely the risk of an outcome that was not intended by choosing that action. In worse cases, we may have a grasp of the possible outcomes of an action, but have no idea about the probabilities of the outcomes. In fact, there may be even worse scenarios, namely those where we do not have a full grasp of the possible outcomes of an action that we take. In those cases we do not know whether we have taken every possible harmful outcome into consideration (Sahlin and Persson 1994). Although it may seem that such actions would be few and far between, it takes little imagination to recognize that in fact many if not all of our actions have uncertain outcomes. The causal chain initiated by any action stretches out in time, i.e., into the future where we (sometimes) have absolutely no clue what the long-term effects of any action might be.

In the context of socially responsible design, obviously, it is impossible to know the exact probabilities of different outcomes in advance, for which reason acting under some degree of uncertainty is unavoidable. Unfortunately, however, such uncertainty is often used

as an argument against acting at all, resulting in necessary initiatives remaining unrealized. Furthermore, as mentioned earlier, there is also an ethical aspect, in the sense that efficient solutions often require someone to make certain sacrifices. The problem in this context is that we often cannot agree upon what is fair. To be able to implement more ambitious solutions, we therefore need to address epistemic and ethical uncertainties.

Based on the discussion above, five types of uncertainties may be derived, as illustrated in Figure 2

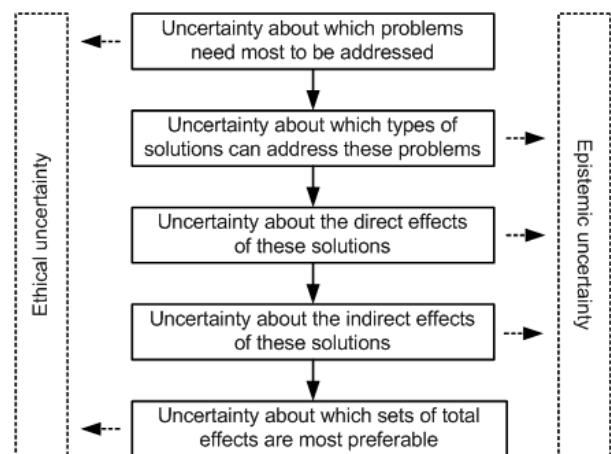


Figure 2: Uncertainties in socially responsible design

The third definition concerns ethics. According to d'Anjou (2010), ethics in the design disciplines has essentially been articulated around notions that from an overall perspective correspond to Kantian (deontological ethics) and Aristotelian (virtue ethics) perspectives, where the Kantian perspective is the most common in relation to professional codes of ethics and practice. D'Anjou, in turn, argues that Sartre's view of ethics has to be seized as a possible foundation for design ethics. Although the authors of this paper sympathize with d'Anjou that it is unlikely that the solution of the deepest moral dilemmas may be forthcoming, there may more to say, and that given a more consequentialist oriented perspective, we can also make headway towards making better-founded moral choices in design.

The examples in Table 1 make it vivid that in many cases the attempt to obtain outcomes with ethical consequences of one type has ramifications for an ethically important goal of a different type. That we do have coexisting and sometimes conflicting ethical aims is not new, but it is not immediately transparent in an Aristotelian, Kantian or a Sartrean view of ethics. On the other hand, consequentialist ethics neatly captures our predicament as moral agents with multiple moral responsibilities and goals. Consequentialism is the ethical theory that tells you that the moral goodness of an action is a function of the consequences of that action. Consequently, the morally best action is the action with the best outcome. However, this generalized formulation does not define 'the scope of relevant outcomes' and what constitutes a 'best outcome', i.e.,

what the moral measure should be. In the variety of consequentialist theory, we find different candidates in the history of philosophy. For example, Mill's utilitarian theory advises us to maximize utility, meaning that the goodness of an act becomes relative to its effect on the total happiness: "actions are right in proportion as they tend to promote happiness; wrong as they tend to produce the reverse of happiness" (with 'happiness' roughly defined as pleasure and absence of pain) (Mill 1861). A related but more recent concept is that of wellbeing, sometimes understood in terms of 'quality of life'. From modern positive psychology we find the vocabulary of preference satisfaction, or simply satisfaction, measured on a numeric scale. In economics, outcomes are weighed against one another in terms of monetary value. Indeed, one of the major obstacles for modern economics is setting values for such diverse outcomes as environmental catastrophes, species extinctions, the pollution of a lake, and quality human life years.

Socially responsible design is premised on the assumption that the values, which we have identified and seek to promote, are in fact the right ones to promote. But, of course, it is a rare occurrence that the benefits of a design can be harvested without any negative costs — and not all values can be put on the same scale, for example, the value of living a stress-free life, enjoying the benefits of beautiful surroundings, and the freedom to practice ones religion of choice or the religious value assigned to a plot of land. Furthermore, because the decisions carried out often have consequences way beyond those relating to the decision makers themselves, there are a number of moral questions that immediately present themselves in this connection. If a cost-benefit analysis is carried out, and the benefits of a design is considered to outweigh the possible costs (i.e., the risk of harm), there may still be a problem if harm befalls a number of people who are not involved in the decision to implement the design in question. If people, who are not decision makers, are potentially negatively affected by a design, they only carry the risk of the project without any expected benefit from it, which can pose a moral wrong (Altham, 1984). This is an issue that should be considered especially in situations in which there are potential negative indirect consequences, as this type of consequence is the one that we are most likely not to take into consideration.

When we isolate one aim as the one to promote, or isolate a possible outcome as the most important to avoid, we are in serious risk of aiming blindly. When we are interested in enhancing the good of an overall population, we may at the same time decrease the goodness for particular individuals of that population and individuals outside of the population whose intended good we were aiming for. This again raises the issue as to how this should feature in a consequentialist ethics for socially responsible design. Solutions to such problems should include making the harmed persons'

interests count to an even degree against those in the chosen population – even when those harmed are not part of this population. Harmed people should be compensated in other ways, or solutions should be chosen that even out costs and benefits. If, on the other hand, we do not allow the goodness of the population to be increased at the expense of someone inside or outside of that population, we can ask ourselves if it is possible at all to solve the problems at hand.

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