

INCLUSIVE DESIGN AS A DELIBERATIVE ENTERPRISE: THE MULTIFOLD VALUE OF INVOLVING DISABLED PEOPLE IN DESIGN

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ABSTRACT

Designers are challenged to consider human differences in order to meet the needs of the widest possible audience – the purpose of inclusive design. Yet, paradoxically, taking differences seriously may severely restrict ‘the widest possible audience’. How can design be fair if it is impossible to meet the needs of all?

Earlier work on inclusivity and quality in design argued for conceiving inclusive design as a deliberative enterprise that involves both designers and the users they design for. A critical reason to involve the latter is that those affected by design decisions are likely to be best positioned to collect contextual information about the needs and demands to be addressed.

In this paper, we build on this earlier work to take a more detailed look at the deliberative feature of inclusive design. To this end, we analyze two cases in which disabled people, not educated as designers, are involved in design: the first case concerns disabled students and staff of KU Leuven, who give students in engineering-architecture advice on their design projects; the second case concerns the Accessibility Advisory Council in Leuven, Belgium, which is chaired and composed by disabled people, and gives advice on design projects the city is involved in. The analysis is based on written reports and conversations about the project discussions with disabled students/staff and the Advisory Council.

Through this analysis we show that the value of deliberation in this context is multifold: letting contextual information filter in the design process; allowing users to advance reasons for and against possible design alternatives, and draw attention to implications, inconsistencies, ambiguities affecting the relevant beliefs and preferences; enabling both designers and users to reflect on reasons that can be shared, and putting them in a situation of interaction where they can recognize their interrelation with a group.

Keywords: Deliberation, disability, fairness, inclusive design

INTRODUCTION: INCLUSIVE DESIGN AND ITS PARADOX

Migration, population ageing, and changes in how disabilityⁱ is understood challenge designers to consider human differences in order to meet the needs of the widest possible audience – the purpose of inclusive design. Yet, paradoxically, taking differences seriously may severely restrict “the widest possible audience”. In seeking a way out of this paradox, this paper sets out to explore the value of deliberation, and more specifically

of deliberative approaches involving disabled people. By way of introduction, we briefly explain what is meant by the paradox of inclusive approaches, and why it is important to find a way out of it. (For a more elaborate explanation, see (Bianchin & Heylighen 2018)).

Inclusive design approaches like Inclusive Design, Universal Design, and Design for All,ⁱⁱ have different regions of origin, but share a similar purpose: to “ensure that [...] products and services address the needs of the widest possible audience, irrespective of age or ability” (Design Council 2009). This purpose is based on two premises: (a) that “there’s such considerable diversity in mental and physical capability (both across people and over the length of our life-course) that associating ‘normality’ with ‘able-bodiedness’ is neither accurate nor acceptable”; and (b) that disability arises from interactions with the surrounding environment that is shaped by design, and not inherently from capability levels, health status, or associated degrees impairment” (Clarkson & Coleman 2005).

These approaches seem to face a paradoxical condition: on the one hand, they prescribe to address the needs of the widest possible audience in order to take into account human differences; on the other hand, taking human differences seriously seems to imply that nothing can be designed that literally meets the needs of everyone, so that “the widest possible audience” may turn out to be severely restricted. For example, while curb cuts (sidewalks flattening into the street) benefit people in a wheelchair, they may conflict with what benefits people with a vision impairment (a sharp curb to detect the edge of the sidewalk). As a result, critics tend to consider inclusive design as unrealistic, and use this as an excuse not to adopt or teach it.

More in general, the problem of inclusive design approaches can be characterised as twofold: (a) “many users with severe functional impairments require solutions that would hamper other users”; and (b) “[i]t is often hard to prioritize which issues are the most important to fix” (Keates 2015). While this is difficult enough for designers where groups of users are *homogenous*, inclusive design approaches start from the premise that users are often very *heterogeneous*. Therefore it is concluded that *designers need help* to prioritize the most important issues.

This conclusion is important because it acknowledges that issues do not order themselves spontaneously according to a naturally shared system of priorities. People tend in fact to diverge about what should be given priority because they endorse different values or different conceptions of the good. In philosophy this is commonly recognized as *pluralism*.

So if inclusive design taken literally is unattainable, and if issues do not prioritize themselves spontaneously, the question arises: how can designers be fair to users?

JUSTICE AS FAIRNESS

In addressing this question, we started exploring to what extent the theory of *justice as fairness* advanced by John Rawls (1999) provides conceptual tools to develop a theory of just design that could help solve the paradox of inclusive design approaches. Why Rawls? His theory explicitly aims at justifying *principles of justice* that govern distributions of benefits and burdens among agents with different talents, capacities, social

positions, and conceptions of the good. Since Rawls’s contractarian approach focuses on individuals, one might consider selecting a more collectivist approach to justice instead. Yet, a reason to prefer a Rawlsian framework is that mainstream collectivist approaches suffer from limitations that become particularly apparent when confronted with the inclusive design paradox. An utilitarian framework would prescribe maximizing usability for the greatest number, thus leaving out minority groups and people living with infrequent impairments. Communitarian approaches rely on the possibility that a shared conception of the good prevails in the whole society, which is both unlikely and morally undesirable in modern democracies and generally in any society complex enough to allow and possibly promote social and cultural diversity.

The conceptual tools Rawls advances to fix the principles of justice are provided by the idea of the “original position”, i.e. the hypothetical initial situation in which agents collectively choose the principles for regulating basic social institutions (Rawls 1999: 15ff.). In order to come out with principles that can be justified to all, Rawls suggests, agents are to choose them under a veil of ignorance that screens out the information that would lead to arbitrarily favoring a specific party: knowledge about their own natural assets and abilities, social position, and conception of the good, amongst others. Note that the veil does not screen out their knowledge of general facts about psychology, society – including that of moderate scarcityⁱⁱⁱ – and human life. Moreover agents are taken to be rational in that they have a conception of the good and the capacity for instrumental reasoning. Rawls thus understands the “original position” as a reasoning tool designed to settle a *question of justification* by working out a *deliberative problem* (Rawls 1999: 16). The expected result is that, under this condition, rational agents will chose *principles* that maximize the welfare of the worst off, while protecting individual freedom and fair equality of opportunity.

JUSTICE AS FAIRNESS IN DESIGN

If Rawls’s theory were adopted in design, there would be no need for designers to know what is good for all or for each specific group they are designing for. Instead Rawls provides a procedure that allows deriving the principle(s) of *just design* according to the general structure of *justice as fairness* (Bianchin & Heylighen, 2018). When this procedure is followed, the basic principle of just design amounts to maximizing usability for the worst-off in the relevant social context, as this is expected to be chosen by everyone under a veil of ignorance about their natural talents and capacities, social position, and conception of the good.

Deriving this principle is but a first step towards just design, however. The next step is asking what it takes to implement it in concrete situations. The main issue in this connection is to gain insight into what users need or want, but also into the underlying structure of their experience, including values and beliefs (van der Bijl-Brouwer & Dorst, 2017). Indeed, in order to apply the principle to actual design problems, the veil of ignorance needs to be lifted to let context-sensible information filter in.

In this connection, a common strategy in design is resorting to empathy (Koupric & Visser, 2009). If we define artefacts as “objects embedded in use plans” (Houkes & Vermaas, 2010, p. 137), it seems sensible to conjecture that designers recruit social cognition in general, and empathy in particular, to anticipate users’ actions. Insights from philosophy and cognitive science, however, suggest that there are important limits to empathy

in relation to design (Heylighen & Dong, 2019). To start with, limits exist as to whom designers can empathize with – as a result of bodily differences and/or (other) egocentric biases. Second, limits result from errors that tend to occur, either when relevant inputs are omitted because of ignorance (highlighting the importance of accurate prior information in empathy), or when your own situation is allowed to seep into the reasoning process when it does not properly belong there (Goldman, 2013). Third, limits relate to the fact that empathy is a spotlight focusing on certain people in the here and now, making you care more about them than about the long-term consequences of your acts or the suffering of those you do not or cannot empathize with. Designers rarely work for certain people in the here and now; often they design for people who are unknown at the time of the design process. And even if users are known, meeting the needs of one end-user may severely hamper that of another – the very starting point of this paper.

In light of these limits of empathy, we turn our attention to deliberation, a form of dialogue involving careful consideration of an issue, examining facts, viewpoints and consequences related to it with the intention of producing decisions, policies, recommendations or collective action (Atlee, 2003). Attention for deliberation is not new in design research, especially not in relation to participatory or co-design (see e.g., Sanoff, 2008). In the context of this paper, our interest in deliberation relates to its potential in relation to inclusive design, and more specifically to the implementation of just design in concrete design situations: how can a deliberative approach help implement the principle of just design in actual design practice?

DESIGN AS A DELIBERATIVE ENTERPRISE

We have seen that, at the concrete level where designers (are to) apply the principle of just design, the ‘veil of ignorance’ must be lifted to let contextual information flow into the design process. This likely requires users to participate in the design process. Earlier work on inclusivity and quality in design argued for conceiving inclusive design as a deliberative enterprise that involves both designers and the users they design for (Heylighen & Bianchin 2013). A critical reason to involve the latter is that those affected by design decisions are likely to be best positioned to collect contextual information about the needs and demands to be addressed.

In this connection, we expect deliberation to complement empathy in two ways:

- Deliberative processes in which users are actually involved in providing information and participate in the processes of decision making can be expected to overcome the abovementioned limitations of empathy in providing context-sensitive information about users’ needs, preferences, values and beliefs.
- Empathy in general, and mindreading^{iv} in particular, underpins the communicative practice that enables designers and users to coordinate in a joint deliberative process that preserves *in concreto* the impartiality depicted *in abstracto* by the “original position”, while providing the normative infrastructure of users’ participation.

Design practice in this sense can be expected to have more to gain from a deliberative approach in terms of users’ participation than collecting information that is hard to acquire by empathy alone. The value of deliberation in this context is multifold, provided that some minimal conditions are respected. These can be

modeled on Jürgen Habermas’s conditions for discourse ethics to allow participants to participate on a fair basis in the decision process (Habermas 1995: 89; see Bianchin 2015):

1. Every participant is allowed to take part in a discourse.
- 2a. Every participant is allowed to question any assertion whatever.
- 2b. Every participant is allowed to introduce any assertion whatever into the discourse.
- 2c. Every participant is allowed to express his attitudes, desires, and needs.
3. No participant may be prevented, by internal or external coercion, from exercising his rights as laid down in (1) and (2).

The upshot of those conditions is in fact to grant that every participant can voice their reason in favor or against specific solutions and expect that they are treated equally – that no point of view is arbitrarily privileged and the process of public reasoning is subject to no constraint beside the force of argument.

Deliberation has been taken to fulfill different desiderata of collective decision making by different authors. Habermas (1995, 1996) originally highlighted public deliberation as a procedure for justifying moral and political principles. Gutman and Thompson (2004) focus on reciprocity, publicity, and accountability as principles of deliberation that economize on moral disagreement by committing participants to mutual reason giving. Sen (2009) sees its main functions in providing context-sensitive information and promote participation. Landmore (2013) draws attention to its epistemic properties.

Together, those views suggest that deliberation possesses an informational, argumentative, reflective, and social dimension, which Dryzek and List (2003) characterize as follows:

- (inf) confront people with new facts or new perspectives on a given issue, as well as corroborate or falsify previously believed facts, information, or perspectives;
- (arg) draw people’s attention to new arguments about the interdependence of issues, confirm or refute the internal consistency of such arguments, make explicit previously hidden premises and assumptions, and clarify whether controversies are about facts, methods and means, or values and ends;
- (ref) induce people to reflect on their preference, in the knowledge that these preferences have to be justified to others;
- (soc) create a situation of social interaction where people talk and listen to each other, enabling each person to recognize their interrelation with a social group (Dryzek, List 2003: 9).

GETTING REAL: HOW TO STUDY DELIBERATION IN DESIGN PRACTICE

Empirical research can be designed to study what changes between before and after deliberation along the lines of Ackerman and Fishkin’s (2003, 2004) deliberative polling. The basic procedure is not very complex:

step 1 is to collect information by interviewing people's preferences and beliefs on the issue at stake, and possibly about more general related questions concerning values and needs; step 2 is to group people together and let them discuss to reach a shared conclusion; step 3 is to interview them after the process and check whether and how their views changed.

In an attempt to gain a better insight into the value of deliberation for inclusive design, we started analyzing two 'natural' experiments whereby disabled people, not educated as designers, are involved in design processes, and in which analogous steps can be recognized:

- a) in the context of the master program in architectural engineering at KU Leuven, students (step 1) design a certain building or (urban) space, (step 2) are teamed up with a user/expert^v (i.e., a student/staff member with a mobility or sensory impairment, or a diagnosis on the autism spectrum) to discuss their design, and (step 3) report and reflect on the discussion orally and in writing.
- b) in the city of Leuven, Belgium, architects and other built environment professionals (step 1) design buildings and (public) spaces for the city and (step 2) discuss their designs with the city's Accessibility Advisory Council (AAC), after which (step 3) the Council reports on the discussion in writing.

We tried to gain access to both cases in a variety of ways: (a) written reports and oral presentations by students and email conversations with user/experts; (b) participant observation (recorded through field notes) during meetings of the AAC, meeting minutes, and informal conversations with the chair and members. Together this material was analyzed in light of the dimensions of deliberation outlined above. Below we report on the preliminary findings of this analysis.

DIMENSIONS OF DELIBERATION IN DESIGN

In the context of the design processes we are analyzing, the role and value of deliberation plays out along at least four dimensions, which we illustrate below.

First, in the design processes at stake, deliberation plays an informative role: it allows letting contextual information filter in the design process. Insofar as the process is unconstrained and condition 2c is respected, participants can display information concerning attitudes, desires, and needs that may be hard to access by empathy. Examples illustrating this dimension are numerous. For instance, students report that discussing their design with a user/expert made them realize that accessibility is not only a matter of measurements, but also of material use; that usability (e.g., visibility) of a design solution may depend on weather and light conditions; or that the legibility of a building is crucially important. As a student who collaborated with a deaf student wrote:

"We didn't think about signage when we made the design. I actually never thought about it in any of the designs I made during my 5 years of architectural education. [...] It would be a good thing if designers already started thinking about [signage] early in the design process. In that way they could integrate the

signals into the architecture and that would lead to prettier and maybe also clearer signs instead of small or discrete signs that have been added at the end. Something even better would be that the space is so clear and structured that it doesn't need any signage. Implicit information then shows the function of a space, for example, small corridors lead to private space whereas wide corridors lead to public space."

Closely related to this informative role, we could observe deliberation playing an argumentative/epistemic role in design: deliberation allows users to advance reasons for and against possible design alternatives, and to draw attention to implications, inconsistencies, or ambiguities affecting the relevant beliefs and preferences. In this sense it improves the quality of the decision process. For instance, discussing their design with a user/expert makes students not only aware *that* certain (overlooked) aspects are important but also *why*. As the architecture student working with a deaf student wrote:

"I might appreciate the same visual characteristics as [our user/expert] but it might be for another reason. I like glass in the façade of a building because it brings in a lot of light for example, but [she] likes it because she then can see what is going on behind the façade and because it makes it possible to communicate with someone on the inside."

Similarly, she explains why legibility is so important for a hearing impaired person:

"one of the most important things that our user/expert encounters as an obstacle while visiting buildings, is the inability of being independent. For a person with a hearing impairment being independent is really important. It is difficult to ask for help because few people know Flemish Sign Language."

An example from the AAC concerns the redesign of a 16th century college accommodating student housing. The architects responsible for the redesign wanted to install a ramp to bridge the height difference between two wings, yet the available space allows only for a ramp that would be slightly too steep according to the accessibility regulations. Therefore the architects proposed to install a platform lift instead. The members of the AAC, however, made clear that they preferred a slope that (officially) is slightly too steep (and thus does not meet the accessibility regulations), because platform lifts are often out-of-order and are stigmatizing, especially in the context of built heritage. In this way, they drew the architects' attention to new arguments against a possible design alternative.

A third dimension of deliberation in design we observed relates to reflection: deliberation enables both designers and users to reflect on reasons that can be shared. In this sense it can be seen as a tool to implement fairness *in concreto*, with respect to local context of justice in design. In concrete cases it seems reasonable to expect that participants enter a discussion with their own partial agenda, but they are forced to present public reasons for their endorsement, i.e., reasons that can be shared by others. Participants may well be primarily aimed at promoting their own agenda, but need to convince others about their priorities and are therefore forced to advance reasons in their support that can be endorsed by others.

An example from the AAC concerns the discussion of the redesign of an arts center. In the architects' proposal, the entrance would be at the ground floor (slightly above street level), whereas the reception desk

would be at level -1. While presenting their proposal to the AAC, the architects mentioned that there would be “a possibility to create a reception situation”, but no fully-fledged reception desk. The design team had had lengthy discussions about where to locate the desk and, because of lack of space on the ground floor, had eventually decided against installing it there. An AAC member who is blind immediately remarked that a reception in the basement is not logical. Another member, diagnosed on the autism spectrum, stressed that a reception on the ground floor is important for people with autism: “imagine someone who’s weaker than me; then this person doesn’t know where to go; it should be clear for people with autism.” Another blind AAC member asked the architects how much space is available on the ground floor and, based on their reply, inferred that there is not enough space to foresee a reception desk *and* allow wheelchair users to pass. She concluded that a reception where no one is present, does not make sense, implying that visitors have to be guided directly to the reception desk downstairs in another way.

Finally, a fourth role of deliberation we observed concerns participation: it puts both designers, users, and possibly a broader audience of stakeholders in a situation of interaction where they recognize themselves as a group, and thus are motivated to cooperate and commit to agreed solutions.

The director of the arts center, for instance, asked whether he and the architects were allowed to return at a later stage to discuss design decisions that would be taken later on in the design process. Also, the chair of the AAC mentioned that, the first time they present their proposal to the council, some people are nervous and do not know what to expect; but after that first meeting they are usually very relieved and enthusiastic. Particularly telling in this respect was a meeting about the city’s catering industry, whose representative started by saying that he and his colleagues could not do anything, and that the AAC had to understand that it was impossible to ensure a wheelchair accessible toilet in every café. After the dialogue with the AAC members, however, his attitude had altered completely to the point that he invited the AAC to their new year’s reception to raffle off portable ramps.

WRAPPING UP

Starting from the paradox of inclusive design, and attempts to seek a way out of it, we briefly highlighted the limitations of empathy and introduced a deliberative approach in order to complement empathy and possibly overcome those limitations. We then pointed to the different roles of deliberation so as to devise how the deliberative process can meet the demand of implementing fairness in applying the principle of just design in actual design practice.

Awaiting more thorough analysis, we believe a deliberative approach can advance inclusive design along several lines:

- in design ethics, it has a role to play in implementing just design: when properly designed to grant participants equal voice – i.e., conditions 1, 2, 3 are not violated by, say, preventing minority groups to argue or express needs – deliberation grants impartiality – i.e., mirrors *in concreto* the fairness conditions depicted *in abstracto* by the original position because everyone’s reason will be treated impartially.

— in design research:

- a deliberative approach can provide a conceptual framework to understand why involving users and more generally stakeholders in design practice may be productive and to model how it may work. More specifically, insights from political theory, where deliberative approaches are well-known, may advance the way inclusive design is conceived;
- methodologically, a deliberative approach may help to devise how to proceed from thought experiment to real experiment about design justice, along the lines of Ackermann and Fishkin's work on deliberative polls. Students' reports and reflections may offer provisional cues as to how it may work.

— in design practice:

- a deliberative approach can connect the demand for deliberation with the limitations of empathy in implementing just design, showing how design justice can be realized at local level;
- our initial analysis suggests that a deliberative rather than advisory board seems to work well. Further investigations on the AAC may provide evidence for this claim. If proven successful, a recommendation may in fact be to replace the AAC by a deliberative board with some power to shape the policies to be endorsed and more generally to design boards to exercise a deliberative rather than an advisory function. Also our analysis suggests to focus policies and procedures on promoting participatory design processes rather than on the standards to be respected by the output and deliberative boards may be more effective than regulatory protocols or ethical codes.

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ⁱ In line with social or hybrid models of disability, we use ‘impairment’ to express an individual’s constraint in a bodily function entailing a set of activity or social limitations, and ‘disability’ to express how societal discourses and practices result in ‘disabling’ a person in particular circumstances, e.g. by the built or social environment.

ⁱⁱ In this paper we use ‘inclusive design approaches’ or ‘inclusive design’ (with lowercase) as an umbrella term to refer to ‘Universal Design’, ‘Inclusive Design’ or ‘Design for All’ (with capital letters) together.

ⁱⁱⁱ Moderate scarcity refers to the uncontroversial view that human agency is constrained by the fact that there are not enough resources to satisfy the needs and/or desires of all agents and thus agents are likely to compete and conflict over the allocation of goods.

^{iv} In both philosophy of mind and cognitive science, mindreading refers to the capacity of ordinary people, without scientific training, to attribute mental states to self and others (Goldman, 2013, p.1, p.19). These mental states include perceptions, bodily feelings, emotional states, and propositional attitudes (beliefs, desires, hopes, and intentions). Other names for the same capacity include commonsense psychology, naïve psychology, folk psychology theory of mind, or mentalising. Mental attributions are commonly made in both verbal and nonverbal forms. People engaged in social life have many thoughts and beliefs about others’ (and their own) mental states, even when they don’t verbalize them.

^v Elaine Ostroff (1997) introduced the term “user/expert” to denote “anyone who has developed natural experience in dealing with the challenges of our built environment. User/experts include parents managing with toddlers, older people with changing vision or stamina, people of short stature, limited grasp or who use wheelchairs. These diverse people have developed strategies for coping with the barriers and hazards they encounter every day. The experience of the user/expert is usually in strong contrast to the life experience of most designers and is invaluable in evaluating both existing products and places as well as new designs in development.”