A FRAMEWORK FOR JUSTICE IN DESIGN PRACTICE
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abstract
In this paper, we outline a framework for justice in design practice that escape the paradox
inclusive design seems to be trapped in and introduces three tools to meet the demands it
raises: Rawls's idea of the original position, cognitive empathy, and public deliberation. We
suggest that applying these tools to the design process makes sense of inclusive design as an
effective design stance and allows meeting the demands for equitable use it raises.

keywords
Inclusive Design; Deliberation; Design Process; Empathy; Justice.

Design, values and a paradox about inclusion.
Inclusive design not only faces the problem of providing a clear conceptual and theoretical
foundation to address ethical issues in design practice, but also seems to generate a distinc-
tive paradox. In exploring how to deal with this paradox, we ended up developing a framework
for investigating and promoting justice in design practice that contributes conceptual and
theoretical tools to adopt a systematic approach to foundational and applied issues of design
ethics.
Research has increasingly focused on how ethics and values both affect and should be
addressed by design practice. The issue has been raised by "value-sensitive design" and "de-
sign for values" approaches that target a broad set of disparate issues, from "human dignity",
over "welfare", "human rights", and "privacy", to "environmental sustainability" and "democ-
racy" among others (Friedman, 2004) (Mandel-Huits, 2011) (Vermaas et al., 2015) (Kroes &
van der Poel, 2015). What marks off such approaches is considering human and moral values
prospectively as a potential target of design practice rather than retrospectively, as evaluative
standard for assessing artefacts after they are produced. These approaches, however, are
still not developed enough to cover the variety of issues they confront in a systematic way, as
they generally lack a clear articulation of the goals, methods, and concepts that is required for
a sensible application of ethical theory to design practice (Cenci & Cawthorne, 2020) (Jacobs
& Huldtgren, 2018). Conversely, inclusive design approaches focus on a clear, apparently
uncontroversial goal, and attention is growing for their theoretical development (Imrie, 2012),
yet they seem to yield paradoxical results. (1)
What we labeled the paradox of inclusive design arises from the apparent inconsistency
between the premises and the conclusion of the argument that typically defines the purpose

of inclusive design. The premises involve recognizing (a) that human physical and mental capabilities vary so widely across individuals and across their life-course that it is inaccurate to associate a certain range of ability with "normalcy" and (b) that disabilities arise from the interaction with social and material environments that are virtually open to structural intervention rather than from whatever degree of physical or cognitive impairment (Clarkson & Coleman, 2015). The conclusion is that design practice should have the purpose to "ensure that […] products and services address the needs of the widest possible audience, irrespective of age or ability" (Design Council, 2009). The paradox arises from the fact that endorsing the premises makes the purpose of inclusive designing impossible and likely restricts the "widest possible audience" to the point of irrelevance. The more differences are taken into account, the less designed artifacts are likely to be usable by anyone and trade-offs can be expected to arise because responding to differentially specific needs will involve costs as to responding to other needs. Conversely the more artifacts design targets usability for all, the less it is likely to be specialized on pain of turning out so complex that overall usability decreases dramatically (Bianchin & Heylighen, 2017). When considering the autism spectrum, for instance, accommodating the needs of hyporeactive people may severely restrict the usability for hyperreactive people, and vice versa.

The paradox converted.
Interestingly, the distinction between impairment and disability mirrors a distinction routinely made in the literature concerning gender and race, that is the distinction between the biological traits that marks offs certain people – like being dark skinned or having female genitals – and the social category into which people carrying such traits are classified, defined broadly in terms of social roles or positions: Black, Asian, woman, man, and so on (Haslanger, 2012). The point is that biological traits impose no necessary condition on social categorization. Now, value-laden terms like "impairment" might blur the issue. Yet the distinction between impairment and disability is apt to convey the difference between (a) a physical or mental condition that is intrinsic to individuals and (b) a restriction in the ability to perform specific physical and cognitive tasks that is socially determined, because it crucially depends on the resources individuals have access to, on the demands they are subject to, and on the prevalent cultural norms that fix what counts as able-bodied. Moreover, it can be argued that sorting out the inabilities that count as disabilities is a political issue because it concerns the opportunities people are taken to be entitled to, which makes disability a question of distributive justice (Begon, 2021). Accordingly, the paradox of inclusive design can be converted into a question of distributive justice. On the one hand, understanding the paradox as the manifestation of an underlying question of distributive justice seems appropriate as long as disability involves a deprivation of opportunities people are entitled to. On the other hand, the paradox arises as a matter of fact under conditions that routinely define the circumstances under which questions of distributive justice arise: we live in a world of limited resources and widespread value pluralism. Under such conditions human differences can be expected to place conflictual demands on design practice rather than lead to harmonic design solutions. By specifying these conditions, the rather vague question of how to address the needs of the widest possible audience is converted into the specific question of how design can address conflicting demands under a moderate scarcity of resources. And this is a question that can be sensibly handled as a question concerning how usability can be fairly distributed across users who differ in their abilities and in the value placed on them.
That the paradox can be converted into a question of justice is therefore good news. Contrary to paradoxes, questions are tractable and we can draw on existing theories of justice to work out the tools for inclusive design practice. More specifically, converting the paradox

into a question of justice answers the worries that have been raised about the alleged utopian character of inclusive design, because it constrains the aims of inclusive design to realistic mundane conditions – moderate scarcity of resources and value pluralism. If a conception of inclusive design can be worked out that matches these conditions, inclusive design will escape the charge of utopianism that is often raised by critics and used as a reason not to teach or practice it (Steinfeld & Tauker, 2002) (De Cauwer, Clement, Buelens, and Heylighen, 2009). In what follows we outline basic tools such approach provides to confront the ethical and political demands placed on design practice.

A framework for justice in inclusive design practice.
The first tool draws on current theories of justice in order to address the moral demand placed on inclusive design. Given that designing artefacts that are equally usable by anyone clashes with the very idea of being responsive to differences, a sensible move is to shift the demand for inclusivity from the output to the process of design and to look for principles that can be used as guidelines for a just design practice. Such principles need be chosen in a way that does not grant an arbitrary privilege to any contingent conception of ableness on pain of giving in to ableism of one sort or another. The underlaying rationale is that justice requires a decision procedure to be set that constrains what counts as a good reason in deliberating those principles in order for them to be impartial and fair (Barry, 1995) (Freeman, 2007).
In political theory, Rawls (1999) introduced this procedural constraint under the label "original position". In the context of design practice, the point of endorsing such a procedure is preventing biased conceptions of ableness to filter into the principles and to be responsive to each user. Following Rawls, we hence suggest that the agents deliberating about the principles should wear a veil of ignorance that blinds the information they possess about their own abilities, social position, and conception of the good while preserving their general knowledge of human psychology, society, and human affairs. In a nutshell, this forces the deliberating subjects to ignore the user condition in which they might turn out to be, that is how they will be affected by design, and therefore to reason as if they could be any randomly chosen potential addressee (Bianchin & Heylighen, 2018).
Think of the original position as a deliberating device that constrains people to take the stance of those who are affected by institutional arrangements. Ignoring the position one will occupy within a specific arrangement will prompt one to maximize the expected utility for the worst offs out of prudential reasons to keep safe in the worst case scenario. Rawls' theory of justice predicts that people deliberating under such constraints will choose two principles according to which the basic social institutions are to be designed (Rawls, 1999, p. 266):
– principle 1: each is to enjoy the maximal compatible system of liberties;
– principle 2: inequalities must be arranged so that they are both (a) to the greatest benefit of least advantaged and (b) attached to offices and positions open to equality of opportunity.
If we turn to design practice, similar principles can be expected to be chosen as long as people ignore which disabilities they will be possibly affected by as a consequence of their physical or mental condition, their social position, and their values. Taking usability as what design distributes, we end up with:
1. artifacts should be designed to overcome limitations to enjoying the maximal compatible system of liberties;
2. inequalities concerning usability must be arranged so that they a) maximize usability for the worst off and b) promote a fair equality of opportunity.
Notice that maximizing usability for the worst off is different from designing for all or addressing the widest possible audience: it entails identifying who will be most affected by a specific design and taking them as the proper target of inclusive design even if this can decrease the

usability of most users or average usability. Moreover, it explicitly admits that differences in usability across users can be fair, when they are justified by the fact that they increase usability for the worst offs. On this view, the target of design justice is a fair social distribution of usability across users rather than maximal usability for all or for the widest audience, where the principles provide general guidelines whose implementation admits multiple realizations that are expected to be sensitive to contextual factors (Bianchin & Heylighen, 2018).

Empathy and Deliberation.
The second tool we advance is empathy. While counterfactual, the original position is psychologically realistic, as it merely asks that "persons can […] simulate the deliberation in this hypothetical situation" (Rawls, 1999, p. 119), that is "from the standpoint of one person selected at random" (Rawls, 1999, p. 120). This is in line with the capacity for cognitive empathy generally credited to humans (Goldman, 2007). Cognitive empathy allows people to put themselves in the mental shoes of others and simulate their reasoning, that is to read their minds in order to collect information about them, predict their behavior and coordinate (Goldman, 1989) (Tomasello, 1999) (Bianchin, 2015a). The implications for moral reasoning have been stressed since Smith's theory of moral sentiments (Smith, 2002) (Goldman, 1993) (Gordon, 1995). In the present context, simulating deliberation allows figuring out the principles one would choose in the mental shoes of the worst offs and concluding that the two principles are justified as the rational choice of whoever whose reasoning is constrained by the veil of ignorance to be impartial and fair.

Things change when it comes to applying the principles to actual design problems, which requires lifting the veil of ignorance to let context sensitive information about specific users and situations to flow into design processes. Empathy again has been reclaimed to design in this connection to access users' needs as well as the background beliefs and values that structure their experience (Kouprie & Visser, 2009) (van der Bijl-Brouwer & Dorst, 2017). Since artefacts are "objects embedded in use plans" (Houkes & Vermaas, 2010, p. 137), it is sensible to expect designers to recruit cognitive empathy to anticipate users' experience. Research on empathy in philosophy and cognitive science, however, suggests that it is subject to significant limitations, which depend on bodily differences as well as on omitting relevant inputs and projecting one's own personal and cultural biases onto other minds (Heylighen & Dong, 2019) (Goldman, 2006). Finally, empathy is notoriously proportional to spatial, temporal and cultural distance.

We suggest that the cognitive limitations of empathy can be overcome by making users participate in the design process through public deliberation, which we conceive as the third tool of inclusive design, as it elicits the connection between design justice and participatory design (Heylighen & Bianchin, 2013). Public deliberation is routinely taken to possess both an epistemic and a moral dimension, as it channels information and arguments that are otherwise hardly accessible, while inducing participants to take a reflective and pro-social attitude in collective decision making (Dryzek & List, 2003). In the context of design practice, this converts in collecting context-sensitive information and argument from those who are affected by design about the demands to be addressed, to submit proposed solutions to public scrutiny, and to commit design practitioners to be responsive to reasons that arise from the relevant audience. Provided that participants can voice their reasons, that no standpoint is arbitrarily privileged, and that public reasoning is constrained by argument (Habermas, 1995, p. 89) (Bianchin, 2015b), the deliberation process can be expected to preserve in concreto the impartiality and fairness depicted in abstracto by the original position, while tuning principles to the contextual features of actual design processes.

Wrapping up.
In this paper, we outlined a framework for justice in design practice that escape the paradox inclusive design seems to be trapped in and introduces three tools to meet the demands it raises: Raws's idea of the original position, cognitive empathy, and public deliberation. We suggest that applying these tools to the design process makes sense of inclusive design as an effective design stance and allows meeting the demands it raises.

notes
(1) In this paper we use "inclusive design approaches" or "inclusive design" (with lowercase) as an umbrella term to refer to design approaches like Universal Design, "Design for All", or Inclusive Design (with capital letters). While differences exist in where these approaches originate and how they have evolved, in the context of this paper, we focus on their shared purpose.

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