Moral Engagement in Design

Five Considerations for Unpacking the Ethical Dimensions of Design Methods

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Introduction

We interact with numerous technologies every day. We use public transport or bicycles to get to work, let our kids play with popular toys, and use e-health technologies to track our health. Not only do these products serve utilitarian functions, but they also influence our norms, values, and practices in multiple and often controversial ways.[1] The idea that products influence human values and practices positively and negatively, and therefore deserve critical reflection, is not new. This is mainly the terrain of the ethics of technology. Likewise, studying the act of designing these technologies is the terrain of design methodologies. In this terrain, how design methods can support the emergent and situated nature of ethical questions and moral dilemmas remains largely unexplored. To address this knowledge gap, we use an interdisciplinary lens to analyze and respond to the challenges of bridging design ethics and design methods.

We argue that design as a discipline, and design methodologies in particular, can benefit from an explicit discussion on the ethics of its methods that arises from within the discipline. While the Bauhaus and similar movements took a clear normative stance,[2] the normative orientation became less visible up to the point that a dedicated question of the ethics of design emerged. The symposium "Ethics in Industrial Design?" may serve as the indicator in this context. It featured a talk by media philosopher Vilém Flusser, who said: "The question of the morality of things, of the moral and political responsibility of the designer, has . . . taken on a new significance (indeed an urgency) in the contemporary situation."[3] In his work on the ethics of architecture, Karsten Harries made the useful distinction between kinds of disciplines: those that consider themselves to be value-neutral and those that acknowledge their normativity and (implicitly) aim at societal impact.[4] The "ethics of X" is often discussed in view of the first kind of discipline; disciplines in the latter category tend to have their own normative discourse and are less likely to become the subject of systematic ethical reflection from the outside. We consider design as an example of the second category. The loss of a visible and clearly articulated moral stance in design changed the expectations toward academic

1 Langdon Winner, "Do Artifacts Have Politics?," *Daedalus* 109, no. 1 (Winter 1980): 121–36, *https://www.jstor.org/stable/20024652*; Peter-Paul Verbeek, *Moralizing Technology: Understanding and Designing the Morality of Things* (Chicago: University of Chicago Press, 2011); Jenny L. Davis, *How Artifacts Afford: The Power and Politics of Everyday Things* (Cambridge, MA: MIT Press, 2020).

2 Steven Dorrestijn and Peter-Paul Verbeek, "Technology, Wellbeing, and Freedom: The Legacy of Utopian Design," *International Journal of Design* 7, no. 3 (2013): 45–56.

3 Vilém Flusser, "Ethics in Industrial Design?," Report Verlag Symposium, April 20, 1991, edited by v. Fré Ilgen, Eindhoven, Stichtag Akademie Industriele Vormgeving). Available at *http://www.flusserbrasil.com*. For more information, see Michael Hanke, "Vilém Flusser's Philosophy of Design: Sketching the Outlines and Mapping the Sources," *Flusser Studies* 21 (2016), *https://flusserstudies.net/sites/www.flusserstudies.net/files/media/attachments/hanke-flusser-philosophy-design.pdf*. The conference "Discovering Design," held at the University of Illinois, Chicago, in 1990, also featured a session on design and ethics. The contributions were later published in *Discovering Design*, edited by Richard Buchanan and Victor Margolin (Chicago: University of Chicago Press, 1995).

4 Karsten Harries, *The Ethical Function of Architecture* (Cambridge, MA: MIT Press, 1997).

disciplines concerning their ethical conduct. This is echoed in the review of the "Discovering Design" conference, where a lack of definitions and contradictory arguments drove the discussion on how to link design and ethics, thus making the conference a pluridisciplinary process of inquiry.[5]

Victor Papanek drew attention to the moral and social responsibility of design as a discipline and a profession.[6] Coupled with a critique of mass production, his seminal work is dense with examples of profit-seeking design developments that tend to address the wants of people rather than their real needs. Hence, the title of the book—*Design for the Real World*—can be read as an anticapitalist plea to design for the real problems and needs of people. In the chapter "Design Responsibility," Papanek deconstructs five myths guiding the industrial design profession (mass production, obsolescence, people's wants, lack of control, variety over quality). Five decades later, these myths remain (more or less) unchallenged while design has been widening its scope. For instance, design methods are increasingly being used not only to design mass-produced physical products but also to help formulate policies and reimagine systems and cities. Consequently, design methods have entered the disciplinary discourse in a variety of disciplines such as public governance, management, and health care. In practice, this implies that nearly anyone can adopt and adapt any design method to design anything they want. This points to the urgent need for a better understanding of the theory of design methods accompanied by an explicit discussion on the ethical qualities of design methods to foresee or overcome challenges ahead.[7]

One way to address this knowledge gap is to propose methods that foreground responsibility. Van den Hoven and colleagues position Value Sensitive Design, Participatory Design, and Vision in Product Design as three potential methods that pay explicit attention to the designer's responsibility.[8] Value Sensitive Design is a family of methods that opens up critical space among stakeholders involved in technology development to discuss moral values that are harmed or facilitated by technologies in development.[9] Participatory Design, with roots in democratizing workplaces (e.g., how to manage the division of labor, and how to implement new production methods and tools), gives a voice to those who are most influenced by technologies in the development process, which "reflects the then-controversial political conviction that controversy rather than consensus should be expected around an emerging object of design."[10] Vision in Product Design, with roots in industrial design research, emphasizes the freedom, authenticity, and responsibility of the designer as a societal actor and invites engagement in design projects after forming a statement or a vision that balances people's needs with the designer's interpretation of larger factors that influence society (e.g., technological

5   Victor Margolin and Richard Buchanan, "Discovering Design: 5–6 November 1990, University of Illinois, Chicago, USA," *Design Studies* 12, no. 3 (1991): 189–91.

6   Victor Papanek, *Design for the Real World* (London: Thames & Hudson, 1970), 215–48.

7   Jaap Daalhuizen and Philip Cash, "Method Content Theory: Towards a New Understanding of Methods in Design," *Design Studies* 75 (2021): 101018, *https://doi.org/10.1016/j.destud.2021.101018*; Marc Steen, "Upon Opening the Black Box and Finding It Full: Exploring the Ethics in Design Practices," *Science, Technology, & Human Values* 40, no. 3 (2015): 389–420, *https://doi.org/10.1177/0162243914547645*.

8   Pieter E. Vermaas, Paul Hekkert, Noëmi Manders-Huits, and Nynke Tromp, "Design Methods in Design for Values" in *Handbook of Ethics, Values, and Technological Design: Sources, Theory, Values and Application Domains*, edited by Jeroen van den Hoven, Pieter E. Vermaas, and Ibo van de Poel (Dordrecht, Netherlands: Springer, 2015), 179–202, https://doi.org/10.1007/978-94-007-6994-6_10-1.

9   Janeth Davis and Lisa P. Nathan, "Value Sensitive Design: Applications, Adaptations, and Critiques," in *Handbook of Ethics, Values, and Technological Design: Sources, Theory, Values and Application Domains*, edited by Jeroen van den Hoven, Pieter E. Vermaas, and Ibo van de Poel (Dordrecht, Netherlands: Springer, 2013), 11–67, https://doi.org/10.1007/978-94-007-6994-6_3-1.

10 Erling Bjögvinsson, Pelle Ehn, and Per-Anders Hillgren, "Design Things and Design Thinking: Contemporary Participatory Design Challenges," *Design Issues* 28, no. 3 (Summer 2012): 101–16.

progress, economic factors, psychological factors, sociocultural developments).[11] Although some definition of responsibility is implied by these approaches, it is not always clear what this definition is and what theoretical grounding it has. This obscures how a main actor in design projects, design practitioners, should enact this responsibility.

These three approaches, which are perhaps the most well-known among value-oriented design methods, pose a steep learning curve and tend to be demanding in execution. What happens when a design team does not have the resources (e.g., time, budget, know-how) to implement these particular methods? Finally, there is a risk in unloading ethics on methods: Focusing solely on methods to enable ethical reflection may imply that ethical design is to be achieved as long as one can choose and implement the "right" method. This is not only misleading but also open to political manipulation. Considering these challenges, we are propelled to critically examine and enhance existing design methods (vs. invent new ones) so that we can create room for ethical reflection at the intersection of design methods and designers as method users.

Design ethics and design methods are studied from a variety of perspectives; before proceeding further, it is worth clarifying our definitions. First, our interest is in designing (design as a verb) rather than technology (design as a noun), and thus our emphasis is on the activities that happen when designing technologies. Borrowing from Badke-Schaub, Daalhuizen, and Roozenburg, we define design methods as mental tools that "provide structure and support designers in dealing with complex and complicated problems in varying projects, contexts and environments."[12] Further, we are interested in conceptual design activities that occur at the early phases of the design process (the so-called fuzzy front end) in which design methods facilitate collecting and making sense out of large amounts of data and insights, imagining possible futures and evaluating them, and making decisions with long-term effects. Regarding design ethics, we assume that designers want to be ethical and that they have the freedom to make or influence design decisions. We are interested in proposing an alternative perspective on how design activities could be organized to create room for moral engagement (in addition to studying how they are currently organized). Relative to that, most of our reflections and examples are situated in the design of products, services, and to some extent, systems.

This article is structured as follows. First, we introduce a definition of moral engagement as a helpful construct for bridging ethical reflection and design methods. Then we discuss three main challenges that face integrating ethical reflection in design methodologies, which lead to five key considerations for moral engagement. These considerations can help us critically reflect on methical choices in design practices. We end with a discussion

11   Paul Hekkert and Matthijs van Dijk, *Vision in Product Design: A Guidebook for Innovators* (Amsterdam: BIS, 2011).

12   Petra Badke-Schaub, Jaap Daalhuizen, and Norbert Roozenburg, "Towards a Designer-Centred Methodology: Descriptive Considerations and Prescriptive Reflections," in *The Future of Design Methodology*, edited by Herbert Birkhofer (London: Springer, 2011), 181, https://doi.org/10.1007/978-0-85729-615-3_16.

on the opportunities and challenges of further studying moral engagement and new research questions to advance the ethics of design practices.

Moral Engagement in Design

We define moral engagement as recognizing and critically engaging with the ethical issues, political questions, and moral dilemmas that emerge in design practices. This definition of moral engagement is informed by the theory of moral disengagement,[13] which explains how people cognitively separate actions from their moral principles to facilitate acting unethically without experiencing moral distress. Moral Disengagement Theory is based on the view that moral agency relies on a self-regulating cognitive process: "People get themselves to behave in accordance with their moral standards through anticipatory positive and negative self-reactions for different courses of action."[14] Imagine noticing an interesting newspaper ad at a café and taking the paper with you on your way out. One may justify this behavior by thinking "everyone takes small things like a paper sometimes" or "being an informed citizen is more important than paying for the paper."[15] These thought mechanisms detach a behavior from internal standards or moral principles and lead the person to think "I have done nothing wrong." In other words, the person disengages actions from moral principles to avoid or reduce moral distress.

Moral Disengagement Theory suggests eight mechanisms by which moral disengagement occurs: moral justification, euphemistic language, advantageous comparison, displacement of responsibility, diffusion of responsibility, distorting consequences, attribution of blame, and dehumanization.[16] For example, moral justification is the mechanism by which unethical behavior is made acceptable by portraying it as serving a bigger, socially desirable goal. In the newspaper example, the moral justification would be "being an informed citizen is more important than paying for the paper." Similarly, minimizing personal responsibility by thinking "everyone else is doing it" would be an instance of diffusion of responsibility.

Moral Disengagement Theory offers an interesting theoretical lens to uncover the cognitive or emotional barriers to incorporating ethical reflection in design activities. This might be particularly helpful for those activities that require high cognitive effort and are typically carried out in response to an open project brief during the early phases of a design project. For instance, it is not uncommon to conduct market analysis at the beginning of a design project. This often helps a company better position the unique selling points of a new product. While awareness of similar products that are currently on the market may help inform design decisions, it may also lead to adopting practices that are common but not necessarily ethical (e.g., gendered product packaging).[17] From the lens of Moral

13   Albert Bandura, Claudio Barbaranelli, Gian Vittorio Caprara, and Concetta Pastorelli, "Mechanisms of Moral Disengagement in the Exercise of Moral Agency," *Journal of Personality and Social Psychology* 71, no. 2 (1996): 364–74, https://doi.org/10.1037/0022-3514.71.2.364.

14   Bandura et al., "Mechanisms of Moral Disengagement."

15   Celia Moore, "Moral Disengagement," *Current Opinion in Psychology* 6 (2015): 199–204, https://doi.org/10.1016/j.copsyc.2015.07.018.

16   Albert Bandura, *Moral Disengagement: How People Do Harm and Live with Themselves* (New York: Worth, 2016), 544.

17   For instance, Magdalena Petersson McIntyre, "Gender by Design: Performativity and Consumer Packaging," *Design and Culture* 10, no. 3 (2018): 337–58, https://doi.org/10.1080/17547075.2018.1516437.

Disengagement Theory, this would be explained as the diffusion of responsibility. Similarly, personas are popular tools for interpreting and communicating large amounts of data collected through research methods (e.g., interviewing, observations). Although they are extremely practical, personas increase the risk of stereotyping.[18] Moral Disengagement Theory would explain this as dehumanization. What these two hypothetical examples illustrate is that the literature on moral disengagement can offer clues on what may enable moral engagement in design practices.

Challenges for Moral Engagement in Design
Some scholars are working on the ethics of emerging technologies,[19] but moral philosophy as a discipline overlooks the sense-making activities in early design activities where the outcome is not yet known but morally relevant design decisions are still being made (e.g., defining the qualities of a product-user group, eliciting the values and needs of stakeholders, framing a specific challenge to be tackled through design). As a result, ethical reflection risks becoming an afterthought almost exclusively reserved for ethicists, who focus on design outcomes as their unit of analysis. Through reflection on our own work and interdisciplinary discussions, we identified three main challenges for an interdisciplinary bridge between ethical reflection and design methods, which are practice-based, methodological, and political challenges.

Practice-Based Challenges
With ethics becoming an increasingly hot topic in design, we worry about the fate of a prospective ethical design method or toolkit to cut across the complexities of method creation and usage in actual design practices. John Zimmerman famously mentioned, "Design methods are like toothbrushes, everybody uses them, but no one likes to use someone else's."[20] Despite the richness of research into design methods, the uptake of research-based design methods in design practices is relatively limited.[21] An industry survey concluded that this limited uptake is due to the lack of interest in organizations, limited resources for adopting new methods, and the promotion practices by noncommercial, disseminating organizations,[22] as well as unrealistic expectations from adopting new methods and tools (i.e., uncertain return on investment). Against this backdrop, design practitioners often create their own hybrid methods and tools integrating method knowledge and domain knowledge to tackle specific challenges they encounter on the job. This widening gap between design research and practice tells us that aiming for a method that explicitly guides ethical reflection would not likely be helpful, and it may even reinforce the idea that ethics can be reduced to a single method.[23]

18   For instance, Phil Turner and Susan Turner, "Is Stereotyping Inevitable When Designing with Personas?," *Design Studies* 32, no. 1 (2011): 30–44, https://doi.org/10.1016/j.destud.2010.06.002.

19   Philip A. E. Brey, "Anticipatory Ethics for Emerging Technologies," *NanoEthics* 6, no. 1 (2012): 1–13, https://doi.org/10.1007/s11569-012-0141-7.

20   As quoted in Steve Harrison and Deborah Tatar, "On Methods," *Interactions* 18, no. 2 (2011): 10–11, 10. http://doi.acm.org/10.1145/1925820.1925823.

21   Donald A. Norman, "The Research-Practice Gap: The Need for Translational Developers," *Interactions* 17, no. 4 (2010): 9–12, http://doi.acm.org/10.1145/1806491.1806494.

22   Claudiano S. de Araujo, *Acquisition of Product Development Tools in Industry: A Theoretical Contribution*, Ph.D. diss., Technical University of Denmark, 2001.

23   Deger Ozkaramanli, Michael Nagenborg, Delfina Fantini van Ditmar, Sanna Lehtinen, Christine Schwöbel-Patel, and Laura Ferrarello. "Design + ethics: How is it more than the sum of its parts?," in *Proceedings of Design Research Society 2022 Biennial Conference,* edited by Dan Lockton, Sara Lenzi, Paul Hekkert, Arlene Oak, Juan Sádaba, and Peter Lloyd, Bilbao, Spain, June 27–July 3, 2022, https://doi.org/10.21606/drs.2022.921.

24 Kees Dorst and Nigel Cross, "Creativity in the Design Process: Co-Evolution of Problem–Solution," *Design Studies* 22, no. 5 (2001): 425–37, https://doi.org/10.1016/S0142-694X(01)00009-6.

25 Nathan Crilly, "The Structure of Design Revolutions: Kuhnian Paradigm Shifts in Creative Problem Solving," *Design Issues* 26, no. 1 (Winter 2010): 54–66, https://doi.org/10.1162/desi.2010.26.1.54.

26 Julie Rosseel and Frederik Anseel, "When Reflection Hinders Creative Problem-Solving: A Test of Alternative Reflection Strategies," *Journal of Business and Psychology* (2021): 1–13, https://doi.org/10.1007/s10869-021-09741-8.

27 Peter Lloyd, "Ethical Imagination and Design," *Design Studies* 30, no. 2 (2009): 154–68, https://doi.org/10.1016/j.destud.2008.12.004.

28 Peter Lloyd and Ibo van De Poel, "Designing Games to Teach Ethics," *Science and Engineering Ethics* 14 (2008): 433–47, https://doi.org/10.1007/s11948-008-9077-2.

29 Anthony Dunne and Fiona Raby, *Speculative Everything: Design, Fiction, and Social Dreaming* (Cambridge, MA: MIT Press, 2013); Carl DiSalvo, *Adversarial Design* (Cambridge, MA: MIT Press, 2012).

30 Matt Malpass, *Critical Design in Context: History, Theory, and Practices* (London: Bloomsbury, 2017), 89.

31 Jeffrey Bardzell and Shaowen Bardzell, "What Is 'Critical' about Critical Design?," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, April 27–May 2, 2013*, 3297–3306. https://doi.org/10.1145/2470654.2466451.

32 Deger Ozkaramanli and Pieter Desmet, "Provocative design for unprovocative designers: Strategies for triggering personal dilemmas," in *Proceedings of Design Research Society 50th Anniversary Biennial Conference*, edited by Peter Lloyd and Erik Bohemia, Future Focused Thinking, 2001-2016, Brighton, UK, June 27–30, 2016, https://doi.org/10.21606/drs.2016.165; Sebastian Loewe, "Toward a Critical Design Thinking: Propositions to Rewrite the Design Thinking Process," *Dialectic* 2, no. 2 (2019): 132–56, https://doi.org/10.3998/dialectic.14932326.0002.208.

Methodological Challenges

Design is traditionally considered a creative problem-solving discipline. Numerous articles address how design creativity can be defined and how creativity functions in design practices. In this regard, one of the most cited works is the co-evolution model of problem and solution and how creativity emerges as a result of sudden ideas or creative leaps that define new solution spaces and help redefine the initial problem.[24] Nathan Crilly offers an overview of creativity models in design and compares sudden creative leaps to cumulative or incremental creativity that accumulates over long periods of purposeful struggle.[25] However, what's often missing in creativity-oriented models of design is that they rarely refer to the ethical or political dimensions of design problems. Disciplinary boundaries and diverging epistemologies further complicate the tension between ethical reflection and design creativity.[26] Consequently, ethical questions that come up in conceptual design activities are often left unresolved, whereas technical design aspects are eagerly explored.[27] When ethical issues do get discussed, designers often lack the analytical know-how for ethical reflection, and thus act out of intuition when making moral judgments.[28] This indicates that for systematic ethical reflection to be as embedded in design practices as, for instance, creativity is, it needs to be studied using the same level and depth of scholarly attention as design creativity has been studied over the past decades.

Turning to reflexive design practices, such as Speculative Design or Adversarial Design may be helpful to understand the level and depth needed for critical-ethical reflection in design methodologies.[29] Briefly explained, these approaches use artifacts to stimulate discussion and debate about ethical and political issues that shape design practices. In this way, they act as a reflexive mechanism for the design discipline,[30] which may be likened to a disciplinary moral compass. Although critical design practices can offer inspiring food for thought, they provide little to no insight into how to conceptualize critique and design critically.[31] This leaves designers who are trained to solve problems inspired yet helpless when engaging with ethical questions and moral dilemmas.[32]

Political Challenges

We finally recognize the risk of "ethics washing," that is, the (superficial) engagement with ethics to escape hard regulations.[33] However, we do not understand "ethics" or "moral engagement" as being in opposition to law or politics. On the contrary, morally engaged design is needed because of the societal (and hence political) implications of the work of designers. For example, designers considering human diversity in design practices is a sign of respect for fellow humans, and it is motivated by bringing about societal change. Indeed, it would be odd to argue for universal

design as an ideal while ignoring the legal rights of people with disabilities, for example.

To this extent, we plea for a political understanding of morally engaged design, because it requires systematic changes regarding the education and practice of designers. This especially holds true since "ethics sells" may only apply to a limited niche catering to the privileged members of a society. Slavoj Žižek's analysis of Starbucks as a company that not only sells coffee but offers a whole ethic might be well placed, but it still only concerns a particular and limited market segment.[34] However, design can make a difference outside these limited segments by making moral engagement the norm, rather than a unique selling point. This also implies recognizing and practicing (and even demanding) political agency in design projects, instead of letting design decisions be led solely by market dynamics, stakeholder needs, or client perspectives.

Considerations for Moral Engagement in Design

Considering the foregoing challenges and (at least partially) tackling them, we opt for introducing the concept of moral engagement to design in a way that it can be interpreted as a stance or competence that one internalizes, instead of a method that one follows. Like Zachary Goldberg's ethic of responsibility, which "internalizes responsibility for ethical action into the actor, rather than seeking ethical characteristics in an external act or abstract value,"[35] we argue that moral engagement can best be understood as a quality of the interaction between design practitioners and the methods they use, rather than a quality warranted by either the designer or the method in isolation.

With this, we invite designers who are motivated to use moral engagement as a starting point to channel efforts. We propose five considerations for moral engagement in design. These considerations evolved through our teaching practices, interdisciplinary reflexive dialogues, and interactive lectures at four different venues that included both academic and professional settings. We pose these as preliminary considerations that can be building blocks for a future theory on morally engaged design, and we mean them as a starting point for an interdisciplinary discussion rather than an established list of criteria. To situate each consideration, we draw from our teaching experience and two large-scale consortium projects on developing an airport security system. These projects were carried out by the second author and were strongly influenced by the ideas of Value Sensitive Design.[36] We chose these projects as prime examples because they offer rich, context-specific, illustrative insights. At the same time, staying focused on one specific technology (i.e., the airport security system) helps us stay focused on the design process and methodological decisions.

33 Ben Wagner, "Ethics as an Escape from Regulation: From 'Ethics-Washing' to Ethics-Shopping?," in *Being Profiled:Cogitas Ergo Sum: 10 Years of Profiling the European Citizen*, edited by Emre Bayamlioglu, Irina Baraliuc, Liisa Albertha Wilhelmina Janssens, and Mireille Hildebrandt (Amsterdam: Amsterdam University Press, 2018), 84–89, https://doi.org/10.1515/9789048550180-016.

34 Slavoj Žižek, *First as Tragedy, Then as Farce* (London: Verso, 2009), 53–54.

35 Zachary J. Goldberg, "Translating Ethical Theory into Ethical Action: An Ethic of Responsibility Approach to Value-Oriented Design," in *Proceedings of International Conference 2020 on Intelligent Technologies and Applications INTAP*, edited by Sule Yildirim Yayilgan, Imran Sarwar Bajwa, and Filippo Sanfilippo (Cham: Springer, 2021), 335, https://doi.org/10.1007/978-3-030-71711-7_28.

36 Matthias Leese and Michael Nagenborg, *The SAGE Encyclopedia of Surveillance, Security, and Privacy*, 3 vols. (Thousand Oaks, CA: SAGE, 2018), https://doi.org/10.4135/9781483359922.

Morally Engaged Design Does Not Outsource Morality

If moral engagement is a quality of the designer–method interaction, it should not be outsourced to other actors in design practices. We identified at least three mechanisms through which moral decision-making gets outsourced to others. First, morality may be outsourced to stakeholders by designers adopting a purely facilitating role in projects and relying solely on what stakeholders want or need. This implies overdoing stakeholder involvement or justifying one's (immoral) choices by "this is what my client/end-users/stakeholders want." From the perspective of positivistic science and the "objective" scientist, relying on stakeholders' self-reports as evidence offers a comfortable position when it comes to substantiating design decisions. Another way morality may be outsourced is by justifying design decisions based on free market structures, as is often the case with gendered product packaging, for example. The argument here may be "This is what sells." Finally, and perhaps more subtly, ethical review committees are perceived as enforcers of ethical research and design practices (both in academia and industry); however, in a way, they also prevent thinking autonomously about how to ensure ethical conduct in a specific design situation.

Morally Engaged Design Demands Explicating One's Ethical Standpoint

As Gernot Böhme reminded us, every "technological solution to a problem is a solution to a problem posed by human co-existence; every optimization of a technical variable is the expression of a *societal value*."[37] Too often, though, such value-laden decisions remain implicit and are mostly concerned with values such as time- and cost-effectiveness. Perhaps due to disciplinary roots in creative problem-solving, design practitioners tend to put themselves outside of the phenomenon they study and maintain the attitude of a problem-solver who is objective, value-free, and unbiased.[38] Morally engaged design challenges this attitude. Like human–computer interaction practices that are informed by the humanities' expert subjectivity,[39] morally engaged design asks for reflexive awareness that explicates one's positionality: the conditions of one's knowing and a disclosure of moral values that implicitly or explicitly guides designing. Morally engaged design does this by explicating one's moral and political standpoint in a design project. It not only facilitates a value discussion among stakeholders, but it also engages in that discussion to question and update implicit values and unseen biases.

Morally Engaged Design Is a "Minimalist" Approach that Works with "Moral Touch Points"

We favor a minimalist approach to morally engaged design, which avoids overformalization of the design process. Rather than relying on methods to justify design decisions, we propose to create room

37 Gernot Böhme, *Invasive Technification. Critical Essays in the Philosophy of Technology*, translated by C. Shingleton (London: Bloomsbury, 2012), 115.

38 Pieter E. Vermaas, Paul Hekkert, Noëmi Manders-Huits, and Nynke Tromp, "Design Methods in Design for Values," in *Handbook of Ethics, Values and Technological Design*, edited by Jeroen van den Hoven, Pieter E. Vermaas, and Ibo van de Poel (Dordrecht: Springer, 2015), 179–202, https://doi.org/10.1007/978-94-007-6994-6_10-1.

39 Jeffrey Bardzell and Shaowen Bardzell, "Humanistic HCI," *Interactions* 23, no. 2 (2016): 20–29.

for critical reflection on methodological decisions. After all, we take as a starting point that designers want to be ethical and want to be careful with striking a balance between formalizing ethics and creating room for deliberation so that ethical reflection can become an integral part of designing.[40] Finally, aiming at a minimalist approach is also helpful to avoid developing a kind of overformalistic "ethical challenges solving algorithm."

As much as we support approaches like Value Sensitive Design, we acknowledge that these approaches demand a lot of resources in terms of money, time, and commitment. For example, for the airport security project, we were able to organize a workshop with diverse groups ranging from elderly people to people with disabilities, women who survived breast cancer, and trans and intersex persons. However, building trust in these diverse communities and organizing an accessible workshop was quite time-consuming. It was a good investment, but it leaves us with the question of whether we need to mobilize similar resources for every design project.

Morally Engaged Design Should Be Able to Deal with Conflicts, Tensions, and Dilemmas Typical of Moral Challenges
Ethical questions often arise in situations where we observe a tension between traditional norms and new opportunities, or when different parties hold conflicting views on a particular action. In extreme cases, we are confronted with moral dilemmas, that is, a situation in which we are expected to act accordingly with conflicting norms. It is important to recognize that such conflicts and tensions are typical for situations in which morality matters; hence, morally engaged design needs room for dealing with dilemmas. Although we agree that design may offer ways to overcome and minimize value tensions,[41] we also propose that morally engaged design should not foremost aim at overcoming these tensions or resolving a dilemma.[42] Rather, we need room for accounting for situations, where "doing the right thing" is impossible (or we need to get our hands dirty).[43]

In the case of potential body scanners, for example, we were confronted with the challenge to prioritize people with pacemakers or people wearing incontinence undergarments. Traditional metal detectors may cause a false alarm when reacting to pacemakers or other metal objects inside the human body. Body scanners do not detect anything inside the human body but may cause a false alarm when detecting incontinence undergarments or other medical means and devices. Hence, we are confronted with the dilemma that each technology will discriminate against some group. We should consider how we can justify the decision that needs to be made and how the public can be informed about that decision. More importantly, any approach of morally engaged design must be able to recognize such dilemmas and avoid glossing over value tensions.

40 Of course, serious challenges may require more ethical thinking space.

41 Jeroen van den Hoven, Gert-Jan Lokhorst, and Ibo van de Poel, "Engineering and the Problem of Moral Overload," *Science and Engineering Ethics* 18 (2012): 143–55, https://doi.org/10.1007/s11948-011-9277-z.

42 Deger Ozkaramanli, Pieter M. A. Desmet, and Elif Özcan, "Beyond resolving dilemmas: Three design directions for addressing intrapersonal concern conflicts," *Design Issues* 32, no. 3 (Summer 2016): 78–91, https://doi.org/10.1162/DESI_a_00401.

43 Lisa Tessman, *When Doing the Right Thing Is Impossible* (London: Oxford University Press, 2017).

Morally Engaged Design Should Account for Value Dynamism

A recent and exciting debate in the ethics of technology concerns the phenomenon of "techno-moral change," "value dynamism," or "value change."[44] The shared idea in these approaches is that technologies influence not only our behavior but also the evaluative frameworks we use to assess these technologies. The idea brings about some interesting challenges, such as shall we evaluate technologies based on our own contemporary frameworks or anticipate future generations' criteria? While morally engaged design does not attend to such questions, the phenomenon of value dynamism requires us to keep a degree of flexibility and avoid fixed checklist approaches. At the very minimum, any approach to morally engaged design should recognize the hermeneutic work entailed in identifying and applying moral principles and values.[45]

Returning to our example for the final time, airport security systems require us to think about the very concept of security, rather than jumping right to the balance between privacy and security. We need to recognize that body scanners not only discriminate against people with disabilities and medical conditions but are disabling by becoming a barrier for some people who do not meet the expectations of normal passengers. Thus, we also need to ask who is the provided security for and what ideas of the normal passenger are embedded in the technology.

Discussion

We introduce moral engagement to design methodologies as a new construct that can help us reflect on the relationship between designers and design methods. Moral engagement can best be understood as an attitude or a stance that characterizes design actions, and it is meant as a theoretical yet actionable starting point for those who are motivated by ethics and responsibility to advance their practices. Simultaneously, and in line with recent research, this construct challenges the toolkit or checklist mindset in bridging design ethics and methods.[46] Many such tools exist to train designers in different schools of thought in ethics or to highlight attention to specific ethical issues, such as gender sensitivity and inclusivity. Although we recognize the need for promoting ethical reflection in design practices by scaffolding ethics-focused methods,[47] focusing solely on methods may prevent a designer from internalizing the responsibility for ethical action. Specifically, we outline three main challenges for embedding ethical reflection in design practices, which are the limited uptake of research-based design methods in design practices (i.e., practice-based challenge), the concern that ethical thinking may hinder design creativity (i.e., methodological challenge), and the risk of engaging with ethics superficially to escape hard regulations (i.e., political challenge). To address these challenges, we see a greater need for constructs

44 Tsjalling Swierstra, "Nanotechnology and Technomoral Change," *Etica & Politica/Ethics & Politics* 15, no. 1 (2013): 200–19; Marianne Boenink and Olya Kudina, "Values in Responsible Research and Innovation: From Entities to Practices," *Journal of Responsible Innovation* 7, no. 3 (2020): 450–70, https://doi.org/10.1080/23299460.2020.1806451; Ibo van de Poel, "Design for Value Change," *Ethics Information Technology* 23 (2021): 27–31, https://doi.org/10.1007/s10676-018-9461-9.

45 Boenink and Kudina, "Values in Responsible Research and Innovation."

46 Ozkaramanli et al, Design + ethics: How is it more than the sum of its parts?, 2022.

47 Colin M. Gray, Shruthi Sai Chivukula, Thomas Carlock, Ziqing Li, and Ja-Nae Duane, "Scaffolding Ethics-Focused Methods for Practice Resonance," *arXiv preprint arXiv:2210.02994* (2022), https://doi.org/10.48550/arXiv.2210.02994.

that can help mediate the relationship between design methods and designers as method users. By using the five considerations for moral engagement, design educators, researchers, and practitioners can think critically about method usage in design practices.

Introducing moral engagement to design has two main implications for design theory. First, it helps sharpen the notion of responsibility in design. "Responsibility" is a widely used term in positioning design in addressing social issues; however, it is rarely defined with a solid theoretical grounding. This blurs the differences (and perhaps similarities) between ethical theory and political theory: After all, nobody wants to be irresponsible. That's why we put morality over politics by asking "what is *my* role in this design situation?" In this way, morality can be transferred across cases or projects where specific methods may not transfer as easily.

Because we focus mostly on the morally engaged designer, one could argue that the outcome of design activities (i.e., products/technologies) is more important in defining ethical design than the intention of the designer. We do not deny the need to study the broader ethical and societal implications of design outcomes. We propose that the ethics of design can be advanced through a dual focus that investigates the impact of design outcomes and the moral dimensions of design activities. This article is a contribution to the latter. Finally, we recognize a tension between moral engagement and formalization. With five preliminary considerations provided for moral engagement, we foresee a danger of this list being used as a checklist, rather than a starting point for discussion and debate. We see a big role for design educators, who may transform these considerations into pedagogical ideas to encourage investing personal energy into physical, cognitive, and emotional labors of ethical reflection.

From the perspective of ethics as an academic discipline, morally engaged design comes with the invitation to engage with existing design methodologies and design practices instead of adding yet another and rather demanding methodological framework (such as Value Sensitive Design). The role of philosophy in this dialogue is also not to bring morality to design but to work with designers to make their own moral position explicit and explore the tensions and dilemmas, which cannot be easily resolved. Thus, if all goes well, designers and philosophers could support each other in avoiding the pitfall of solutionism.

Future research can expand on the notion of moral engagement by exploring how moral disengagement mechanisms outlined by Bandura and colleagues manifest in design practices.[48] This may lead to identifying strategies for moral engagement. Another interesting research question is: What is the influence of design expertise on moral engagement? Does moral engagement increase or decrease over time with increasing design expertise? What constitutes design expertise is an important research question

48 Bandura et al., "Mechanisms of Moral Disengagement."

in design research,[49] and thus it seems crucial to understand whether and how to conceptualize moral engagement as an element of design expertise. As is evident in the multiplicity of these research questions, the notion of moral engagement and the preliminary considerations outlined in this article lay the groundwork for an extensive research agenda on design ethics from a methodological perspective.

Conclusion

The purpose of this article is to introduce the concept of moral engagement to design, which is inspired by Moral Disengagement Theory.[50] We define moral engagement as recognizing and critically engaging with the ethical issues and moral dilemmas that emerge in design practices. With this, we reiterate that ethical reflection in design practices cannot be reduced to a method, toolkit, or any other form of add-on activity in design practices. In addition, we add to the discourse on what responsibility means in design through a methodological perspective and argue that ethical commitment is not guaranteed even if a method calls for it, which may be further complicated due to practice-based, methodological, and political challenges. This marks the need for new theories and constructs that may mediate the relationship between designers as method users and design methods.

To address this need, we introduce moral engagement to design methodologies; to give form to this engagement, we propose five preliminary considerations. According to these considerations, morally engaged design does not outsource morality, demands explicating one's ethical standpoint, is minimalistic, and responds to value tensions and value dynamism. We situate these considerations in theory and practical examples (i.e., the design of an airport security system) to illustrate their value for creating room for ethical reflection in design activities. Last but perhaps most important, we propose these considerations as an invitation to think critically about method usage in design, not as a framework to prioritize one method over the other.

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49   Nigel Cross, "Expertise in Design: An Overview," *Design Studies* 25, no. 5 (2004): 427–41, https://doi.org/10.1016/j.destud.2004.06.002.

50   Bandura et al, "Mechanisms of Moral Disengagement."