Authors' pre-print version (i.e., final draft pre-refereeing)

To be published as:

Heylighen, A., Dong, A. (2019) To empathise or not to empathise? Empathy and its limits in design,
Design Studies

Please refer to the publisher's final version.

To empathise or not to empathise?

Empathy and its limits in design

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Highlights

- We review empathy in design using insights from philosophy and cognitive science.
- Empathy has become a design ideology rather than a principle suitable in some situations.
- Applications of empathy in design tend to skip an ethical and a perspectival step.
- Accounting for embodiment in empathising would benefit assessing its suitability.
- We invite designers always to reflect on the limits of knowing others' experiences

Abstract

In the 1980s, one of the values advanced to distinguish the field of design from the sciences and the humanities was empathy. Since then it has become an important theme in design practice, research, and education. Insights from philosophy and cognitive science, however, suggest that empathy has become a design ideology rather than a principle suitable for judging the value of design solutions in some situations – for some end-users and some aspects of their experience. When it is applied in design, two important steps tend to be skipped: an ethical and a perspectival one. Assessing its suitability, we hypothesise, has much to gain theoretically and practically from accounting for the role of embodiment in the process of developing empathy.

Keywords: design cognition, empathy, ethics, psychology of design, user centred design

Gaining empathy for end-users is generally considered a central task in design. In his 1982 article 'Designerly ways of knowing', Nigel Cross (1982) listed empathy as one of the 'values' that distinguish the – at that time – largely neglected 'third culture' of the field of design from the two already established 'cultures' of the sciences and the humanities, which had 'long been recognised as dominating our social, cultural and educational systems':

'the values of each culture are

- o in the sciences: objectivity, rationality, neutrality, and a concern for "truth"

- o in the humanities: subjectivity, imagination, commitment, and a concern for "justice"

- o in design: practicality, ingenuity, *empathy* [emphasis added], and a concern for "appropriateness".'

The seed of this attention toward empathy had been planted a decade earlier. John Chris Jones (1970) claimed that the industrial revolution had introduced a distance between designer, user, and maker, and, as a result, the direct feedback loop between design and use, typical of traditional societies, became interrupted. In the endeavour to restore the feedback loop, a key role seemed to be in store for empathy as a – or *the* – way for designers to gain insight into users' experiences, needs, and desires. Frustrated with the notion 'that only younger people were ideal consumers' (Wilmoth, 2012, p. 4), from May 1979 until October 1982, Pat (Patricia) Moore conducted the longest and most in-depth study in what would eventually be described as empathy in design. Moore transformed herself into an 85-year-old woman to understand everyday life as an older woman in the presence and absence of wealth (Moore & Conn, 1985). Moore pioneered an empathic model of design to focus on the "use-ability" level of products and to embrace the needs and desires of Primary Users and Primary Purchasers equally (Wilmoth, 2012). Design researchers and scholars noted that human factors tools and methods to understand human behaviour and thought as the basis for product development were mostly based on cognitive models with emotion considered a 'nuisance variable' (Dandavate, Sanders, & Stuart, 1996, p. 415). These scholars argued for the inclusion of empathy, but mostly to satisfy emotional needs, rather than as an approach to design. Eventually, Segal and Suri (1997) mobilized empathy as a form of data collection and analysis, elevating it into 'not only something to use during interactions with users, it is a way of thinking that should permeate throughout the design process' (Segal & Suri, 1997, p. 454).

Since then, empathy has become an important theme in design, being central to broad frameworks such as universal design (also referred to as inclusive design or design for all (Coleman, 1999)), and human-centred design. Moore claims that "Universal design is driven by empathy, an understanding

that one size doesn't fit all" (Krznaric, 2014) Human-centred design and more domain-specific versions such as user-centred design, goal-directed design, and experience-centred design regard empathy as '[o]ne of the most powerful tools designers offer' (Cooper, Reimann, Cronin, & Noessel, 2014, p. 22) and a defining characteristic 'to know the user' (Wright & McCarthy, 2008). In all of these frameworks and approaches, empathy between designers and users is generally advanced as a quality of the design process (Kouprie & Visser, 2009, p. 438).

Empathy in design tends to be considered as a value to aspire, cultivate and reinforce.¹ It is taken to be influenced by the designers' abilities and willingness (Kouprie & Visser, 2009) – hence the importance of training and experience to expand designers' 'empathic horizon', i.e. the limits on their individual ability to empathise beyond characteristics of their own group (McDonagh, Woodcock, & Iqbal, 2018). Moreover, it is taken to be enhanced by several types of techniques (Kouprie & Visser, 2009, p. 439):

- research techniques for establishing direct contact between designers and users; think of IDEO's Human-Centered Design Toolkit (ideo.org, 2009), which advances the use of video ethnography and contextual interviews for designers to gain empathy for and insight into patients' or communities' experiences to identify their unmet needs;
- techniques for communicating findings of user studies to design teams; examples include the use of storytelling as a way to cultivate empathy and narrative inquiry (giving insight into others' thoughts, feelings, and experiences) to heighten empathy and to think about and create 'empathic design solutions' (Carmel-Gilfilen & Portillo, 2016). In user-centred design, for instance, personas (Cooper, 1999) are deployed to communicate detailed narrative representations of end-users including their goals, behaviours, and tasks, can invoke empathy with user perspectives (Grudin, 2006; Marsden & Haag, 2016);
- ideation techniques to evoke a designer's own experiences in a domain relevant to the user; a case in point here is the use of wearable simulations such as gloves, goggles, or whole-body suits (Boffi, Fontana, Rosati, & Milani, 2014; Carmel-Gilfilen & Portillo, 2016). These objects restrict the movements of the wearer to evoke, through a combination of affects and sensations, the experiences of a person having difficulties performing certain physical tasks (Kullman, 2016).

In the management literature, scholars adopted the concept of empathy as a means for enabling innovation (Leonard & Rayport, 1997) and later developed tools to develop a deeper understanding of their customers' 'real lives' (Seybold, 2001). The drive for the entanglement of empathy into

product and service innovation was a pragmatic one. As competitors introduced more products into a category, consumers were replete with choice but confused (Whitney, 2015). This confusion led companies to hire designers to empathise with consumers using methods such as ethnography to understand customers better than customers understood themselves. Mention is even made of an ‘empathy economy’, which prizes user experience and in which empathy provides commercial advantage (McDonagh et al., 2018).

Despite the central role attributed to empathy in design, for a considerable period of time, a fundamental understanding of what empathy in design actually is and how empathy can be achieved was lacking. Ten years ago, Kouprie and Visser (2009) therefore set out to inform the discussion in the design community by applying the concept of empathy as it had developed in psychology at that time. In particular, they highlighted three interrelated distinctions as relevant for designing: (1) between the affective and the cognitive component of empathy (2009, p. 442); (2) between becoming and staying beside the person with whom you empathise (2009, pp. 442-443); and (3) between different phases of empathy – stepping into, wandering around in, and stepping out of the other’s world (2009, pp. 442-443). Based on these distinctions, the authors advanced a four-phase framework for applying empathy in design and concluded that its application requires designers to be motivated and structurally invest time (2009, p. 447).

More recently, however, more nuanced voices about empathy in design are heard. Research in the context of inclusive design, for instance, suggests that there are important limits to empathy. Particularly striking in this respect is the observation that several designers who are living with an impairment seem to be wary of relying on empathy to design for (other) individuals living with an impairment. Examples include the late American architect Michael Graves (Berger, 2018), American architecture student Danielle Koplitz (Janssen, 2019), Flemish architect Wendy Hoeven (Berger, 2018), and Spanish architect/researcher Marta Bordas Eddy (Pérez Liebergesell, Vermeersch, & Heylighen, 2018).ⁱⁱ While one would expect that these disabled designers are particularly well-placed to empathise with end-users, with and without impairment, analysis of how they design suggests that they are above all mindful of involving end-users when assessing design issues.

In light of this observation, this article sets out to update and refine Kouprie and Sleeswijk Visser’s work. The aim is to contribute to informing the discussion about empathy in the design community by recruiting insights from philosophy and cognitive science. After briefly articulating what distinguishes empathy from related concepts with which it is sometimes confused, we try to synthesise the main contemporary understandings of empathy in both fields and highlight which aspects of these

understandings are particularly relevant in relation to design. We conclude the article by relating the insights gained to previous research, discussing implications, and formulating hypotheses that could direct future research.

1 Distinguishing empathy

Empathy is commonly understood as the capacity to stand in another's shoes (see for instance IDEO's *Human-Centered Design Toolkit* (ideo.org, 2009)), that is, as 'the act of coming to experience the world as you think someone else does' (Bloom, 2016, p. 16). What exactly this act entails, however, is far less clear. As Bloom (2016) points out – and we can confirm after having written this article – 'there are probably nearly as many definitions of empathy as people working on this topic' (de Vignemont & Singer, 2006, p. 435).

Part of the ambiguity around empathy derives from the tendency to mix it up with related concepts referring to adjacent emotional responses, such as sympathy, emotional contagion, or personal distress. In differentiating empathy from these concepts, two dimensions are said to be important: (a) whether the response is self- or other-oriented, and (b) whether or not the response presupposes awareness of the distinction between self and other (Stueber, 2018, p. 10).ⁱⁱⁱ

Affective or genuine empathy – which is what we focus on here – is characterised as 'the vicarious sharing of an affect' (Stueber, 2018, p. 10). How strictly this sharing should be interpreted, however, remains unclear. For some authors, empathizing requires you to be in affective states of the same order and kind as the person with whom you empathise ((Coplan, 2012; de Vignemont & Singer, 2006; Jacob, 2011) all referenced by (Stueber, 2018)): you know how the other feels about something by feeling the same about it. For other scholars, empathy requires only having feelings that are more congruent with the other's situation than with your own ((Hoffman, 2000) in (Stueber, 2018)).

In both interpretations, however, it is essential that you are minimally aware that your emotional experience is due to the other's emotion, and that you consider the other's emotion as an appropriate response to their situation. In this sense, it is perhaps more accurate to state that empathy is oriented to the other's situation, as opposed to your own situation, rather than empathy being oriented to the other as opposed to yourself. Indeed, in order for your (un)happiness to be genuinely empathetic, it has to be (un)happiness about what makes the other (un)happy, not (un)happiness about the other being (un)happy. For instance, you feel the sadness of the other's grief for the death of their parent, not sadness for the fact that the other is grieving (Stueber, 2018).

While distinguishing empathy from other emotional responses is necessary *conceptually*, discriminating between them *empirically* is difficult, as they tend to occur together. In evaluating and comparing different studies, it is thus critical to take into account how, within the context of these studies, empathy has been defined and operationalised (Stueber, 2018, p. 11).

In what follows, we present two of the central options to understand how empathy works: as directly perceiving others' experiential life and as resulting from attributing experiences to others indirectly.^{iv} For each of these positions, we then highlight what lessons can be learned for the context of design.

2 Empathy as direct social perception

2.1 Direct social perception in a nutshell

Within the phenomenological tradition of philosophy, empathy is understood as a unique and irreducible kind of intentional experience ((Stein, 1989) referenced in (Finlay, 2005) and (Stueber, 2018)), which allows you to know the experiential life of others (Zahavi, 2014, p. 129). It is understood as 'the mode of presentation of foreign consciousness' (Zahavi, 2014, p. 129) or, put differently, 'the experience of the embodied mind of the other, which takes the asymmetry between self-experience and other-experience to be a necessary and persisting existential fact' (Zahavi, 2014, p. 151).

German philosopher Edith Stein (1989) (Zahavi, 2014, p. 126) pointed out that, '[a]lthough empathy differs from perception by not giving us the object directly, it does resemble perception in so far as its object, say the empathised pain or distress, is given directly, unmediated, and non-inferentially as present here and now.' Empathy is thus intuitive: it has a directness and immediacy [here and now] to it that is not shared by whatever beliefs one might have about someone in their absence (Zahavi, 2014, p. 150).

This comparison between empathy and perception was further articulated by Stein's teacher Edmund Husserl (1973) (Zahavi, 2014, p. 128) as follows: 'When I perceive an object, say a sofa, the object is never given in its totality but always incompletely (...) Despite this, the object of my perception is exactly the sofa and not the visually appearing profile.' Yet, '[w]hereas the absent (...) profiles of the object can in turn become originally present to me, namely, if the prerequisite movements are carried out, this can never happen with the other's experiences' (Zahavi, 2014, p. 129). Crucial to empathy is therefore an entirely *embodied relationship*: 'In empathy I participate in the other's positing' (Finlay, 2005, p. 276).

The role of the body in empathy was further highlighted by Maurice Merleau-Ponty (1962), referenced in Finlay (2005, p. 276), who argues that what enables the possibility of real empathy specifically is *a human's corporeal commonality*: 'it is precisely my body which perceives the body of another person'.

2.2 Relevance to design

The idea that empathy is the primary means for understanding other minds has never been taken seriously in the analytic tradition of philosophy until very recently.^v Moreover, the emphasis on its intuitive (direct) character restricts empathy to face-to-face forms of interpersonal encounters (Zahavi, 2014, p. 151), which may be particularly limiting in the context of design. Nevertheless, this understanding of empathy still deserves attention because it highlights the role played by the body. If the possibility of real empathy is enabled only by corporeal commonality, how is this commonality to be understood? In other words, to what extent does one need to be the same as the other to empathise? (Finlay, 2005, p. 280). Referencing Stein (1989), Finlay (2005, p. 280) answers this question as follows: 'When there is too big a difference, the possibility of empathy is compromised. However, to some extent, differences can be transcended through empathy as one imaginatively identifies with the Other's position.'

At first sight, it should not come as a surprise that the body plays a role in empathy: a common-sense assumption indeed says that the body is involved in cognition (Goldinger, Papesch, Barnhart, Hansen, & Hout, 2016; A. Wilson & Golonka, 2013; M. Wilson, 2002). This interdependence between the body and cognition is illustrated by the Facial Feedback Hypothesis: the manipulation of the facial activity associated with smiling influences people's affective experiences in the presence of an emotional stimulus (Strack, Martin, & Stepper, 1988). When individuals imitate others both in action and feeling, they are able to feel what other people feel (Iacoboni, 2008) and respond compassionately. Individuals with a strong tendency to imitate others tend to have a higher disposition to empathy (Chartrand & Bargh, 1999).

Nevertheless, the body and its role are not central to either research on design cognition in general or research on empathy in design in particular. So far, little attention has been paid to the body of the designer and its role in empathising with end-users, or to the body of the end-users and its role in empathising with them. Indeed, studies on empathy in design typically do not consider differences in bodies among designers, among end-users, or between designers and end-users.

An exception to this rule worth mentioning here concerns (the abovementioned) work on wearable simulations, the use of which is justified as a way to foster designers' empathy for end-users of a specific type. Deana McDonagh et al. (2018), for instance, sought to expand students' 'empathic horizons' through the use of experiential simulations: low fidelity experiential simulations (e.g., glasses simulating a variety of conditions, ear plugs and tinnitus headsets, masking tape, gloves to reduce sensation in hands); and the higher technology GERT (gerontology) ageing suit, which beside poor vision or impaired hearing ability, confronts students also with discomfort due to mobility impairments. Laura Boffi et al. (2014), for their part, aimed to support designers in building empathy for Parkinson's end-users by introducing in the design process a hand shaking wearable device to simulate Parkinson's hand tremor.

In the former example, the simulations are said to support 'empathic modelling' in that they 'allowed [students] to experience a disability and how it effects [sic] interaction with others' (McDonagh et al., 2018, p. 5). In the latter, the outcome is described in more nuanced terms: the hand tremor simulating device was found to convey to designers some physical effects caused by Parkinson's disease; yet, a greater understanding of the end-users resulted from closely observing and actively engaging with actual users (Boffi et al., 2014).

In light of the understanding of empathy discussed above, we would argue that the difference in outcome between both examples has nothing to do with differences in the presumed accuracy of the wearable simulations. In fact, developers of such devices themselves acknowledge that the attempt to create accurate simulators is futile, as they would still be unable to capture the complexity of lived experience (Kullman, 2016). Rather, we would argue, in line with Kim Kullman (2016), that the latter example brings about the limits or the 'incompleteness' of empathy ((Foster, 2010, p. 218) in (Kullman, 2016, p. 85)). Any 'knowledge about the body in design needs to be coupled with an acceptance of "nonknowledge" (Gross, 2010, pp. 50-67)' (Kullman, 2016, p. 85). In other words, whereas it may be possible to expand designers' 'empathic horizon' (McDonagh et al., 2018) to some extent, there will always be a limit to this expansion.

Accepting this 'nonknowledge' has important implications for design ethics in that it raises questions about the deliberations designers ought to undertake before deciding to try and empathise with those for whom they are designing. Rather than considering empathy as something to aspire, cultivate and reinforce *by default*, designers may need to ask themselves: in whose shoes *can* I stand? In other words: which end-users are designers able to empathise with? And for which end-users is the difference too big such that empathy is compromised?

3 Empathy as indirect attribution

3.1 Indirect attribution in a nutshell

Rather than adhering to the phenomenologists' view, the understanding of empathy in philosophical circles seems to be dominated by the position that empathy results from some cognitive process that makes you attribute the mental state to the other instead of perceiving it. Within this position two strands can be distinguished.

According to the *Theory Theorists (TT)*, understanding others' mental states requires a theory that allows you to explain and predict their behaviour (Goldman, 2013; Stueber, 2018). In this view, you attribute a mental state to another person through a theoretical inference, which is based on the use of a so-called folk psychological theory – or theory of mind – and available evidence.

According to the *Simulation Theorists (ST)*, by contrast, ordinary mindreading^{vi} abilities are ego-centric and 'knowledge-poor' in the sense that, rather than a folk-psychological theory, you utilise yourself as a model for the other person's mental life (Stueber, 2018). Within these mindreading abilities, two levels are distinguished (Goldman, 2013): low-level mindreading of states in which the content is not structured propositionally (perceptions, emotions, etc.) and high-level mindreading of propositional attitudes (beliefs, desires, hopes, and intentions). Closely paralleling the low-level/high-level varieties of simulational mindreading, Simulation Theorists make a distinction between two routes to empathy: the mirroring route and a 'reconstructive' route (Goldman, 2013).^{vii}

- The mirroring route refers to the discovery that empathic responses to someone else's experience involve the same brain tissue that is active when you yourself have that experience (Bloom, 2016, p. 61).^{viii} This 'mirroring' has been observed for goal-related actions (so-called motor mirroring), sensations (e.g., touch, pain), and emotions (e.g., disgust) (Goldman, 2013, p. 202 ff.). Whereas the 'mirror neurons' involved in these processes may have been somewhat overhyped (Bloom, 2016, p. 63), '[t]he more general finding of shared representations—the discovery that there exist neural systems that treat the experiences and actions of others the same way they treat the experiences and actions of the self—really is an important discovery about mental life' (Bloom, 2016, p. 64). In relation to empathy, the mental states activated by motor mirroring (i.e. plans or intentions) may not be particularly relevant, yet several mental states involved in other types of mirroring are relevant (Goldman, 2013, p. 202).^{ix}

- Compared to the automaticity of this mirroring route, the ‘reconstructive’ route to empathy is much more effortful and also more detectable in daily life: it involves adopting the perspective of someone else by trying to replicate or re-experience their (mental) state via a constructive process. Exploiting prior information about the other individual, you use ‘enactment imagination’ to reproduce in your own mind what might have transpired, or may be transpiring, in the other (Goldman, 2013, p. 204 ff.).

3.2 Relevance to design

Both strands within this position have been criticised for being unattractive because they are highly demanding in terms of computational complexity (see for instance (Bermúdez, 2003) referenced in (de Bruin & Michael, 2018)).^x Nevertheless also their understanding of empathy is relevant to mention in relation to design. Particularly interesting in this respect are the different levels of mindreading and the different routes to empathy. Like the phenomenological view, they make clear not only *that* there are limits to empathy, but also *what* these limits are: empathy is – or at least can be – biased, short-sighted, and innumerate (Bloom, 2016, p. 9).

To start with, findings from neuroscience show that empathy based on mirror-based low-level mindreading is prone to bias (Bloom, 2016, p. 30): for the most part, whether or not you are consciously aware of it, empathy is modified by your beliefs, expectations, motivations, and judgements (Bloom, 2016, p. 68) and can be modulated by other information or preferences (Goldman, 2013, p. 100). Your empathic experience is influenced by what you think about the person you are empathizing with and how you judge the situation that person is in. It turns out, for instance, that you feel more empathy for someone who treats you fairly than for someone who has cheated you (Bloom, 2016, p. 68).^{xi} Moreover, although you might intellectually believe that the suffering of your neighbour is just as awful as that of someone living abroad, it is far easier to empathise with those who are close or similar to you, and those you see as more attractive or vulnerable and less scary (Bloom, 2016, p. 31). Besides by ‘nonknowledge’ about the body, a designer’s ability to empathise with users thus may be constrained also by other factors, which further underlines the importance of reflecting on the end-users with whom designers are able to empathise.

High-level simulation-based mindreading is susceptible to several types of error as well (Goldman, 2013, p. 213). The first type – omission – occurs when relevant inputs are omitted because of ignorance, thus highlighting the importance of prior information in empathy: ‘If one doesn’t have accurate and relevantly complete information about the prior mental states of the target, attempts to put oneself in that person’s mental shoes in order to extrapolate some further mental state have

relatively shaky prospects for success' (Goldman, 2013, p. 210). This may help to explain the abovementioned observation that some designers living with an impairment are wary of relying on empathy during design. At first sight, one would expect that these designers, because of their own experience of being disabled, are better equipped to empathise with a broader, more diverse group of end-users. In reality, however, the situation turns out to be more nuanced: the designers' embodied experience of being disabled themselves seems to make them aware that they lack accurate and relevantly complete information about others' lived experience. For this reason, they find it crucial to involve (future) users in the design process. Thus, rather than trying to empathise with end-users' lived experience in its full complexity, these designers seem to empathise with a particular aspect of it: being disabled by environments that have been designed with inaccurate or incomplete knowledge about the diversity in end-users. This, then, seems to suggest that, besides the question which end-users they can empathise with, another important question for designers to ask concerns with which aspect(s) of end-users' experience they are able to empathise.

However, even if accurate and relevantly complete information is available, high-level mindreading is prone to egocentric biases (Goldman, 2013, p. 209). Accurate simulation requires quarantining, i.e. excluding your own genuine mental states from the construction. Yet, extremely common in high-level mindreading is quarantine failure (also called commission) (Goldman, 2013, p. 209): your own genuine mental states are allowed to seep into the simulation process when they do not properly belong there (because the target is not them) (Goldman, 2013, p. 213). That this type of failure would occur in the context of design is not unlikely. In the context of architectural design, for instance, several studies found that architects are accustomed to relying on their own experience as a main reference during design (Cuff, 1991; Imrie, 2003; Verhulst, Elsen, & Heylighen, 2016). In this connection, (Cipolla & Bartholo, 2014, p. 97) – some of the scarce more critical voices about empathy in design – contrast empathy with a dialogical approach: 'In dialogical terms, empathy fosters distance between the designer and other participants because it does not promote inclusion. For designers, empathy means treating other participants as "another I" and whoever "treats a person as 'another I' does not really see that person but only a projected image of himself. [...]" (Friedman, 2003, p. 70).'

Moreover, even well-informed and accurate simulation can steer you incorrectly (Bloom, 2016, p. 9). Empathy is a spotlight focusing on certain people in the here and now; this makes you care more about them than about the long-term consequences of your acts or the suffering of those you do not or cannot empathise with.

'Empathy is like a spotlight directing attention and aid to where it's needed.

But spotlights have a narrow focus, and this is one problem with empathy. It does poorly in a world where there are many people in need and where the effects of one's actions are diffuse, often delayed, and difficult to compute, a world in which an act that helps one person in the here and now can lead to greater suffering in the future.' (Bloom, 2016, p. 30)^{xii}

Designers rarely work for certain people in the here and now; instead they often design for people who are unknown at the time of the design process. (Think about the design of a public space or building.) Even if users are known, meeting the needs of one end-user may severely hamper that of another. For instance, in the context of inclusive design, Keates (2015, p. 392) points out, 'many users with severe functional impairments require solutions that would hamper other users.' Moreover, the effects of designers' actions are indeed diffuse, often delayed and difficult to compute: any design, when it is implemented, will generate waves of consequences over an extended period of time, some of which undesired; and there is no way to trace all waves of repercussions through all the affected lives ahead of time or within a limited time span (Rittel & Webber, 1973).

This seems to point at a more fundamental ethical question for designers: to empathise or not to empathise? In other words, is empathy the most appropriate way to restore the feedback loop to start with, or are other ways more appropriate?

4 Conclusion

In trying to contribute to informing the discussion about empathy in the design community, we have recruited insights from philosophy and cognitive science, and highlighted which aspects of these are particularly relevant in relation to design. The outcome of our exercise suggests that research on empathy in design has taken a reflexive stance toward the positive side of empathy for end-users. Therefore, for those seeking a parsimonious explanation of the effect of empathy on the quality of design outcomes, the answer is that it is only positive. The predominantly positive reports about empathy in design with a lack of emphasis on drawbacks raise the concern that empathy may have become a design ideology rather than a principle that is appropriate in some situations and inappropriate under other circumstances.

From what started as an objective to ensure that designs meet user desires and needs (Jones, 1970; Kouprie & Visser, 2009; Moore & Conn, 1985) and an agenda to raise the prominence of user experience and emotions with regard to human interactions with designed objects (Mattelmäki, Vaajakallio, & Koskinen, 2014), empathy in design has grown into an approach to the practice of design in which the objective is for the mental states and imagination of the designer to match those

of end-users (Kouprie & Visser, 2009; Mattelmäki et al., 2014). In other words, empathy has become an end rather than a means, which is where the interest in empathy began. As such, empathy in design has opened itself to a type of quarantine failure (Goldman, 2013).

This article advances the perspective that design scholars and designers tend to skip two important steps in the application of empathy to design. The first is an ethical step: the choice to apply methods to gain empathy with end-users is an ethical decision. The empathy a designer can or cannot gain for end-users and their situations will determine what solutions the designer will end up deeming valuable or not valuable on behalf of end-users (Lloyd, 2009). The presence or absence of the designer's own values during the process of gaining empathy will determine trade-offs and therefore the social impact of the design (Le Dantec & Do, 2009). The second step is perspectival and relates to embodiment. In order to take the affective perspective of another, the designer must also take the bodily perspective of the other. The inclusion of embodiment in design means designers 'should be aware of how they are being affected at a bodily level' (Finlay, 2005, p. 277) and not just at a mental level. Our view is that there is much to be gained theoretically and practically from accounting for embodiment in the process of developing empathy. It would offer additional explanatory power in the suitability of empathy in design.

The concept of embodiment rests on the hypothesis of the body and mind being closely related and influencing each other in various non-trivial ways (Glenberg, 2010; Körner & Strack, 2018). Embodiment in empathy conceptualises this non-trivial influence as an interdependence of empathy on the priming or manipulation of the body.

In practical terms, the consideration of empathy is active by requiring designers to live the experience of the mind and body of the end-user(s) whose cognitive and/or affective state they are supposed to be affected by. It is also evaluative in that designers need to assess the degree to which their mind and body are being affected by an end-user's cognitive and/or affective state. Based on these considerations, the key question we raise for design practice and scholarship on empathy in design is this: does the consideration of embodiment differentially influence the suitability of empathy as an avenue for generating insights into users' experiences, needs, and desires?

We hypothesise that empathy for end-users correlates positively with the active and evaluative dimensions described previously. When the active or evaluative dimensions are weak, we hypothesise that the quality of designs could diminish, especially if designers rely on empathy as the sole means to generate insights into users' experiences, needs, and desires. In those situations, we hypothesise that (complementary) participatory approaches would be more appropriate.

Awaiting further research in this direction, our contribution does not want to discourage designers from developing empathy for users. Rather, it is meant as an invitation ‘to recognise and respect the “realm of interpersonal difference” among people (Ratcliffe, 2012, p. 491) through ongoing reflection on the eventual limits of knowing the experiences of others’ (Kullman, 2016, p. 85).

Acknowledgements

Omitted for blind review.

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ⁱ For an exception, which we will come back to, see the work of Cipolla and Bartholo (2014). A shift from the designer as an individual who empathises to an individual who generates empathy as an outcome of the design process (Tuomala & Baxter, 2019) may be needed to promulgate the concept beyond design practitioners.

ⁱⁱ At the same time, in her PhD dissertation, Marta Bordas Eddy (2017) advocates for empathy-based architecture.

ⁱⁱⁱ *Emotional contagion* is an emotional response that does not presuppose awareness of this distinction: it occurs when you start feeling similar emotions caused merely by the association with other people (Stueber, 2018). *Sympathy* for its part is an emotion *sui generis* that has the other's negative emotion or situation as its object from the perspective of somebody who cares for the other's well-being (ibid.). Sympathy is oriented to the other, but not to the other's situation: if you sympathise with someone you are (un)happy about the other being (un)happy, not about what makes them (un)happy. Finally, *personal distress* is understood, like sympathy, to be other-caused in that it responds to the perception/recognition of another's negative emotion or situation. Yet, unlike sympathy, it is primarily self-oriented in that the other person's distress just makes you feel bad, rather than making you feel bad for him or her. Moreover, unlike empathic emotions, it is not any more congruent with the other's emotion or situation. Rather it defines your own outlook onto the world (ibid.).

^{iv} A potential third option seems to be Predictive Error Minimisation (de Bruin & Michael, 2018), yet because limited research about it is available so far, it is not included here.

^v Possible reasons include the unfamiliarity with the phenomenological literature, and the fact that 'philosophers in this tradition never provided a philosophically comprehensive account of mental concepts that would allow us to see them as part of an intersubjectively accessible practice in which we interpret, predict, and explain the behaviour of other agents' (Stueber, 2018, p. 4).

^{vi} 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.

^{vii} While Alvin Goldman (2013) has argued that there are two distinct routes to empathy, he suggests that it is possible that the reconstructive route also involves mirror neurons: 'Note, however, that this

would not necessarily undercut the distinction between mirroring and reconstructive processes. As standardly conceived, mirror processes are automatic processes generated by observation. In addition, neurons with mirror properties might also participate in such an effortful process as imagination (...), a key component of reconstructive empathy.'

^{viii} Processes have been observed through which patterns of neural activation in one individual lead, via their observed manifestations (e.g., behaviour or facial expressions), to matching patterns activation in another individual (Goldman, 2013, p. 200).

^{ix} Note that the mirror systems associated with sensations and emotions do not use the same neural hardware, yet they are treated as similar in having significant mirror properties and, as such, considered to instantiate a single type of route to empathy: the mirroring route (Goldman, 2013, p. 204).

^x As a result, hybrid TT/ST accounts have been proposed (see (Goldman, 2013)).

^{xi} Empathic responses to pain, for instance, have been found to be modulated by learned preferences ((Singer et al., 2006) referenced in (Goldman, 2013, pp. 100-101)); e.g., in an experiment participants played an economic game in which two confederates played fairly or unfairly. When participants underwent functional imaging while observing the confederates receiving pain stimuli, mirrored pain responses in males were significantly reduced when observing an unfair person receiving pain.

^{xii} In some cases, empathy-based concerns thus may clash with other sorts of moral concerns, making empathy inadequate as a moral guide (Bloom, 2016). Empathy is thus not by definition good, but rather depends on the moral theory one holds.