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COERCED RECOGNITION THROUGH THE SERVICE INTERFACE

A Design Ethics Framework for Revealing User Oppression

Fernando Secomandi f.secomandi@tudelft.nl
Department of Design, Organization and Strategy, Faculty of Industrial Design Engineering, Delft University of Technology, Delft, The Netherlands, ORCiD 0000-0001-6800-3919

Frederick M.C. van Amstel vanamstel@utfpr.edu.br
Graduate Program in Prospective Design, UTFPR, Curitiba , PR, Brazil, ORCiD 0000-0002-9163-7095

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Corresponding author: Fernando Secomandi

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Abstract

This research expands the phenomenology-inspired branch of human-computer interaction by introducing an original design ethics framework that reconceptualizes user interfaces as service interfaces. This shift toward services is essential for understanding how users have been historically oppressed by designers while interacting with computing systems. Drawing on the critical integration of Peter-Paul Verbeek's design ethics framework of technology-mediated morality and Georg W. F. Hegel's ethics of recognition, we examine a particular moment of user oppression: coerced recognition. This refers to the phenomenological-dialectical process in which users are coerced into recognizing themselves as lesser beings in relation to designers when engaging with technology. The proposed design ethics framework not only reveals user oppression but also points toward the possibility of liberation through mutual recognition between users and designers.

> Allow me, as my first act as Minister, to state the obvious, the obvious that has been denied for the last four years. Workers of Brazil, you exist and you are valuable to us. Women of Brazil, you exist and are valuable to us. Black men and women of Brazil, you exist and are valuable to us. Indigenous people of this country, you exist and are valuable to us. Lesbian, gay, bisexual, transsexual, *travesti*, intersex, and nonbinary people, you exist and are valuable to us. People living on the streets, you exist and you are valuable to us. People with disabilities, elderly people, amnestied people and their children, victims of violence, victims of hunger and homelessness, people who suffer from a lack of access to health care, fellow domestic workers, everyone who suffers from a lack of transportation, everyone who has their rights violated, you exist and you are valuable to us…I want to be a Minister of a country that puts life and human dignity first.
>
> Silvio Almeida's inaugural speech as Brazil's Minister of Human Rights and Citizenship (2023).

1 INTERSUBJECTIVE RECOGNITION AND THE ETHICS OF INTERFACE DESIGN

The opening quote to this article may strike some readers as a platitude. If so, this only underscores a fundamental truth about being human: the need to have our dignity recognized by others. Indeed, Silvio Almeida, the author of the above pronouncement, readily concedes that what he says should be obvious to the Brazilian population. However, being himself a Black person who rose from a modest socioeconomic background to the position of a renowned scholar on the philosophy of right, Almeida knows all too well that recognition is not always immediately given. In his major work on structural racism (Almeida, 2019, p. 41), for example, he writes that recognition is often unequally granted to different groups of people and can only be fully achieved through political struggle.

In recent decades, conflicts around recognition have attracted a great deal of attention in the public sphere. In the wake of these conflicts, many authors in social and political philosophy have paid increased attention to the topic of recognition (e.g., Gunn & Wilding, 2021; Habermas, 1973; Honneth, 2018; Ikäheimo, 2022; Siep, 1996; Williams, 1992). Nevertheless, this scholarship largely overlooks the role of technology in exacerbating or resolving recognition struggles. Moreover, there is little understanding of how technology emerges *through design activity* as a mediator of social struggles. Consequently, the responsibility for creating technologies that can generate or reinforce social recognition may become diffuse, vaguely attributed to "society," as if everyone had equal access to shaping these technologies and were equally affected by their consequences.

Human-Computer Interaction (HCI) is the field at the forefront of conceptualizing computer technologies and their interfaces for human users. In this article, we propose how the challenge of recognition can be addressed within this field. More specifically, we do that by recalling and updating a line of phenomenology-inspired research started in the late 1980s, in the wake of the emergence of various post-cognitivist HCI frameworks (see Hauser, 2018; Kaptelinin et al., 2003; Rogers, 2004).

Inspired by Hubert Dreyfus's phenomenology-grounded critique of computers, which came mainly from Martin Heidegger and Maurice Merleau-Ponty, Pelle Ehn (1988), Terry Winograd and Fernando Flores (1986), and Susanne Bødker (1991) pioneered approaches to designing computer technology based on human embodiment and usage practices. These HCI perspectives were later adopted by others, including Gui Bonsiepe (1999), who extended his interface concept from the Chilean cybernetic revolution to graphic interfaces of personal

computers and other technologies; Paul Dourish (2001), who explored the work of Alfred Schutz's to grasp sociality and intersubjectivity in computer design; Dag Svanaes (2013), who expanded on Merleau-Ponty's take on perception; and Daniel Fällman (2003), who elaborated on Edmund Husserl's approach to phenomenological reduction and on Don Ihde's analysis of technological mediation.

When it comes to the design of user interfaces, specifically, all these views share a normative standpoint, inspired by Heidegger, regarding computer-mediated experience and action—the so-called "tool perspective"[1]. Put succinctly, once designers acknowledge the *thrownness* of humans in practical use contexts, they should anticipate situations of *breakdown* in computer use (when the tool becomes *present at hand* for users) and provide help and repair, to keep users as much as possible focused on their task at hand (when the tool becomes *ready to hand*). As of today, this stance on computer interface design remains dominant within phenomenological strands of HCI research, although not without criticism (Bolter & Gromala, 2006; Capurro, 1992; Kettley, 2006; Redström, 2009; Secomandi & Snelders, 2013; van Amstel & Gonzatto, 2022).

In the final section of this article, we will return to this point and explain why the concept of recognition offers a necessary alternative for HCI design. We will argue that the user emancipation sought by early phenomenological HCI can be better supported by a service-oriented perspective on computer interfaces—one that emphasizes recognition—than by a tool-oriented perspective that prioritizes skill. To substantiate this, we unfold our argumentation in the coming sections at the intersection of two lines of design philosophy.

The first line is the postphenomenological approach to service interfaces, which accounts for human experiences with various types of technologies embedded in service co-creation (Secomandi & Snelders. 2013). This conception of the interface implies a form of social contract mediated by computers involving at least two collective bodies or entities: *designers*, those who shape the interface to provide users with access to computer resources, and *users*, those who utilize these resources for their own benefit or that of others. This relationship can be codified and enacted in many ways, from the terms of use (Brilmyer & Lee, 2023) to graphic icons. For example, the icon of MacOS's Finder application, with its smiley joining two overlapping faces, alludes to friendly social interactions that might develop through a carefully designed interface, either between users and designers or between users themselves. The service concept reminds us that computers, like any form of technology, can bind humans in a mutually dependent relationship. Therefore, we seek to reveal the human-to-human relationality that is implicit in the *inter-face* concept.

The second line of design philosophy is the dialectical-existential HCI theory that characterizes the ideology of user oppression, or *userism* (Gonzatto & van Amstel, 2022). According to it, userism is historically established by HCI theories and approaches that attempt to reduce humans to *mere users* of computers when they lack the knowledge, skills, or financial resources required to interact with computers in a "designerly" way. This type of oppression disregards the full humanity of users in relation to designers, and it can intersect in pernicious ways with other types of discrimination based on gender, class, ability, nationality, and ethnicity. Through userist computer interfaces, designers are able to enhance their own existential condition at the expense of others who use them, often in already vulnerable conditions.

By advancing these two lines of research, we aim to illuminate the phenomenological moment of human recognition in service relations through computer interfaces. To this end, we draw on

[1] While we emphasize the phenomenological basis of HCI's tool perspective, we recognize that it is also influenced by other theoretical frameworks, including Marxism and activity theory (cf. Gill, 1996). To our knowledge, Ehn and Kyng (1985) were the first to use this term in the context of HCI.

and integrate two additional theories coming from philosophy. The first is the postphenomenological *ethics of design* of Peter-Paul Verbeek (2011), which we cover in the next section of this article. Postphenomenology is often referred to by researchers investigating human-computer interactions and design research (e.g., Fällman, 2010; Gunkel, 2018; Han et al., 2022; Hauser, 2018; Rapp, 2023; Rosenberger, 2009; Tripathi, 2015, 2016; Zheng, 2023). Verbeek's work, specifically, presents an original interlinking of design, morality, and technological mediation. However, it does not emphasize human-to-human recognition and other potentially conflictual social processes. As such, his postphenomenological framework for design ethics is in need of revision to better account for the inherently intersubjective nature of human-technology relations.

To address the shortcoming just noted, in the third section of this article, we delve into the *ethics of recognition*. We analyze Georg W. F. Hegel's ([1807] 2018) concept of mutual recognition and its deficient actualization under the coercive relations famously described in the so-called master-slave (a.k.a. lord-bondsman) dialectic. A growing number of philosophers of technology have started to bring up Hegel in discussions about contemporary technologies, including robots and AI (e.g., Coeckelbergh, 2015; Crisafi & Gallagher, 2010; Gertz, 2018; Waelen, 2022). We join this effort by approaching recognition through a progressive lens to reveal computer-mediated oppression and by connecting this idea to postphenomenological philosophy of technology.

Our synthesis of Verbeek's design ethics and Hegel's ethics of recognition, presented in Section 4, results in an original framework for revealing computer-mediated oppression as a phenomenological-dialectical movement of *coerced recognition* between users and designers. As demonstrated both theoretically and with the help of an example of gender-based discrimination during airport security screening (Costanza-Chock, 2020), in userist service interfaces, people are coerced to recognize themselves as falling short of the full human potential to shape the service interface according to their will, as opposed to designers. The article ends with the implications of rethinking phenomenological HCI beyond the tool perspective, as already noted above.

2 MEDIATED MORALITY, SUBJECT CONSTITUTION, AND DESIGN

This section discusses the framework of mediated morality in design presented by Verbeek in the book *Moralizing Technology: Understanding and Designing the Morality of Things* (2011). This framework draws primarily on postphenomenology, an approach pioneered by Ihde (e.g., 1979, 1990, 2009) in the 1970s and widely regarded as one of the leading approaches within the contemporary philosophy of technology (see Achterhuis, 2001; Mitcham, 1994). Verbeek was the first postphenomenologist to devote significant attention to design, helping disseminate postphenomenology to wider design audiences.

In the book discussed here, Verbeek follows up on a debate raised by Langdon Winner (1980) in the influential article "Do Artifacts Have Politics?" For Verbeek, providing an answer to this question requires challenging the presumption that technology and humans can be thought of as existing independently from one another. He holds that in our technology-saturated culture, where so many moral decisions are influenced by technology, conceiving humans as fully autonomous beings and, therefore, of morality as a purely human affair is not only inappropriate but fruitless.

Building mainly on postphenomenology, but also inspired by Bruno Latour's actor-network theory (cf. Verbeek, 2005), Verbeek posits a relational ontology whereby morality is always co-constituted by humans and nonhumans through *technological mediation*. According to him, this

is meant not only to align postphenomenology to a recent "ethical turn" within the philosophy of technology but also to equip technology ethics with practical insights for engaging with "designers and users" and "directly with technological developments and their social embedding" (Verbeek, 2011, pp. 164–165). Verbeek's call to "moralize technologies" (2011, pp. 21–40), while based on a "nonhumanist" ontology, is not hostile toward humanist values such as self-determination, integrity, and responsibility. Instead, as he explains, the objective is to supersede the dichotomy between human subjects and nonhuman objects embedded in modern frameworks of humanist ethics.

Such a move to ascribe moral significance to the nonhumans involved in human-technology relations has some important and related implications for Verbeek. First, if nonhuman objects participate in the constitution of human subjectivity, then there must be an explanation of how morality is shaped in a technology-mediated condition. Second, how technology comes into being as a nonhuman form mediating human-world relations must also be explained; in other words, design must be accounted for. Finally, if artifacts are as much entangled in morality as humans are, the actions that give form to them must also be scrutinized.

Turning to the first issue of how moral subjects are constituted in technological mediations, Verbeek builds on Steven Dorrestijn's seminal interpretation of Michael Foucault's work. Dorrestijn convincingly shows how Foucault can offer novel insights to philosophers of technology through his analyses of the goal-oriented techniques, methods, and rationalities that govern the constitution of humans as subjects. Especially in his late work addressing the ancient ethics of Greeks and Romans, Foucault came to the realization that humans have an active role in the constitution of their moral subjectivity by "governing and fashioning their own way of being in relation to conditioning circumstances" (Dorrestijn, 2012, p. 227). Dorrestijn concludes that *freedom* in technological mediation requires humans to actively subject themselves—in a process called *subjectivation*—to technology as one such conditioning circumstance.

Likewise, Verbeek argues that free moral subjects do not come about by merely postulating a domain for autonomous human existence that can be safeguarded from the influence of technology, as if freedom were a natural state of being human potentially threatened by reliance on technology. Instead, he puts it, "technologies help to *constitute* freedom by providing the material environment in which human existence takes place and takes its form" (Verbeek, 2011, p. 60). He calls this process "relational freedom" (2011, p. 111), further emphasizing the self-directedness and purposiveness of humans by asserting that subjectivation means "'designing' or 'styling' the way [the moral subject] is formed in interaction with technology" (2011, p. 89).

Therefore, Verbeek's appropriation of Foucault encapsulates both an ethical framing of technological mediation as well as a *reflexive* turn toward the constitution of human subjectivity. Before Verbeek, postphenomenological research had been mostly concerned with how the world is constituted for humans as an *experienced object* in technological mediations, whereas what Verbeek does is turn attention to the constitution of the *experiencing subject*. This amounts to the first implication of Verbeek's granting of moral significance to nonhumans in technological mediations.

The second implication is design's role in constituting moral subjectivity. Verbeek starts with the assumption that designers give form to nonhuman technologies, and the technologies they design, in turn, influence user actions and behaviors in non-neutral ways. This is true even when designers do not deliberately seek to influence people's actions: "Designers cannot but help to shape human actions and experiences via the technologies they are designing" (Verbeek, 2011, p. 118). For this reason, Verbeek imbues formgiving practice with a great sense of responsibility throughout his work, claiming that "designers materialize morality" and even that "designing is the moral activity par excellence" (2011, p. 40).

The third implication of Verbeek's granting of moral significance to nonhumans is that, if designers have the power to moralize users through technology, at least partially, then design should be done democratically. Verbeek reserves ample space in the book to address this issue. The answer he develops, which is not entirely distinct from that of Ihde (2002, pp. 103–112), goes in the direction of design methodology. Briefly put, to minimize the undesirable or unintended moral impacts of technologies for people, appropriate methods and tools should be employed to establish "a connection between the context of design and the context of use," thus enabling people to "'build in' forms of mediation that are considered desirable" (Verbeek, 2011, p. 91).

The ontological basis of Verbeek's contributions is consolidated in the ethical framework of *technology-mediated morality in design*, which stipulates a tripartite play of agencies (see Figure 1): the agency of designers, who, deliberately or not, give form to mediating technology (and by so doing, indirectly influences the user-technology relations); the agency of technology, which influences user actions in ways that can sometimes be unforeseen to both designers and users; and the agency of users, who appropriate the technology for their particular purposes (Verbeek, 2011, p. 99).

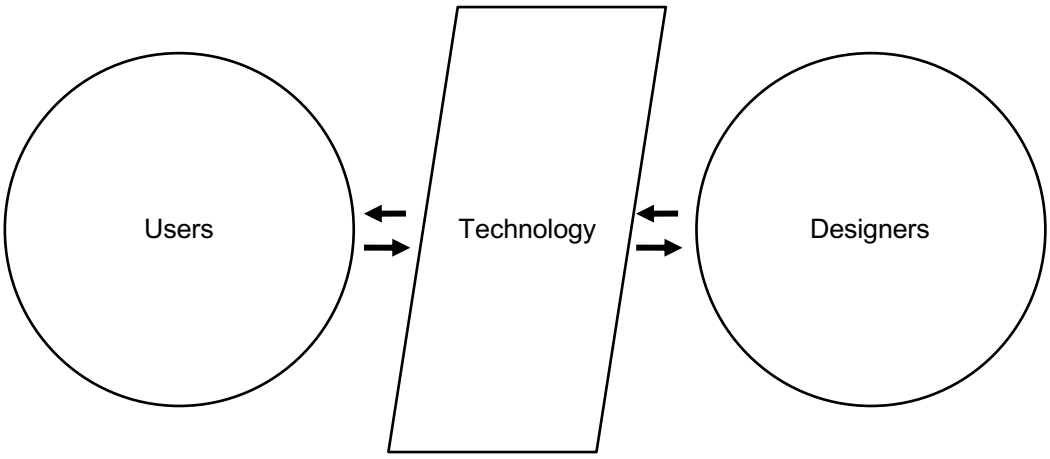

Figure 1. Technology-mediated morality in design (based on Verbeek, 2011).

Some critics argue that Verbeek's framework can be used to excuse or justify conservative and paternalistic attitudes toward users by designers (e.g., Cressman, 2020; Rao et al., 2015). We believe they are correct insofar as the framework, as argued below, effectively severs the link that would allow users to perceive designers as at least partially responsible for the built-in morality of technological mediations. As a result, morality is reduced to the individual affair of how users develop "relational freedom" together with technology, but unrelated to any eventual constraints imposed by designers.

> Any forms of mediation that make it impossible to develop a relation to them—because they dominate users in such a way that there is no way to appropriate and modify their impact—should be approached very critically….When technological mediations do not leave any room for "relational freedom" for human beings to constitute their (moral) subjectivity, they oppress and limit human subjects and must not be permitted to function as a basis for generating forms of subjectivity (Verbeek, 2011, p. 111).

In this passage, Verbeek concludes that oppression occurs when technological mediations obstruct users' agency in constituting themselves as subjects, *regardless* of how users perceive designers' roles in shaping these mediations. Nowhere in the book does he provide a solid

foundation for users to rely on their lived experiences to hold designers morally accountable for oppressive technologies. In fact, users are not presented as fully capable of discerning any intentionality from designers within technological mediations, even though such intentions are inevitably inscribed into the form of these mediations during the design process. Freedom is understood to be *interobjectively* constituted between humans and technology on each side of the framework, but not between subjects across sides.

The issue with this proposal is that it fails to provide a rigorous account of how users can assess designers' moral intentions *from their own technology-mediated standpoint*. Verbeek undoubtedly establishes *that* users are morally connected to designers through technology. However, his explanation of *how* this occurs lacks a phenomenological basis. According to his framework, one must adopt a third-person perspective to differentiate between the contexts of design and use and to discern technology's mediating role in the constitution of users' moral subjectivity. Even if this perspective were useful for facilitating a democratic ethical assessment of controversial technologies—one of Verbeek's aims in the book—the feasibility of assuming such an unmediated position remains questionable from a postphenomenological standpoint.

Verbeek is seemingly unaware that his framework already contains a *social* account of the co-constitution of moral subjectivity by users and designers, which we are trying to foreground. However, because he does not explain how the intentions of others can be experienced *from within* one's relation to technology, he does not fully elucidate the *intersubjective* constitution of morality and freedom that we hold is always at play within technological mediations. This limitation, along with the broader neglect of the social-political dimension of human-technology relations, has long been a critique of postphenomenological research (see Feenberg, 2009; Gertz, 2018; Kaplan, 2009; Secomandi, 2018). Recently, Verbeek and other postphenomenologists have begun to redress it by engaging with Hannah Arendt, Emmanuel Lévinas, among other philosophers (Bergen & Verbeek, 2021; Liberati, 2020; Verbeek, 2020). However, these advances have not yet led to a structural revision of the design ethics framework of technology-mediated morality, which is something we perform in this article.

To conclude, Verbeek's work is relevant to our examination of user oppression by connecting the topics of technological mediation and design ethics. At the same time, it can be criticized for construing humans as individual subjects who are dependent on technology, but not on other subjects to exercise freedom. In the next section, we discuss Hegel's ethics of recognition, which can be used to remedy this shortcoming of postphenomenology and develop an intersubjective account of technology-mediated morality.

3 SELF-CONSCIOUSNESS, MUTUAL RECOGNITION, AND MASTERS/SLAVES

Hegel is not known to have produced a distinct philosophy of technology. Yet, contemporary philosophers of technology have started to rediscover some of his key insights (e.g., Bock, 2021; Coeckelbergh, 2015; Gertz, 2018; Juchniewicz, 2014, 2018; Kislev, 2020; Waelen, 2022). The Hegelian concept that mostly interests us for present purposes is *recognition*, and it has attracted wide attention within social and political philosophy at least since the 1970s.

Our discussion of recognition here is mainly framed by the interpretations of Robert R. Williams (1997, 1992) and supported by others who similarly regard recognition as a central feature of Hegel's philosophy (e.g., Brandom, 2019; Brownlee, 2022; Germana, 2017; Habermas, 1973; Ikäheimo, 2022; Lynch, 2001; Monahan, 2006; Pippin, 2010; Quante, 2018; Siep, 2014; Teixeira, 2021). According to this interpretation, recognition presents the intersubjective foundation that underlies every human experience within what Hegel conceived as "ethical life," including love, kinship, reconciliation, honor, and freedom. It can be actualized both at the individual level, in

how one relates to another, and at the collective level, in how a subject relates to a group, an institution, or the state. Later in this section, we also demonstrate how our appropriation of the concept was influenced by other notable figures associated with Marxism and existentialism (e.g., Beauvoir, 2011; Fanon, 2008; Freire, 1970; Kojève, 2012; Vieira Pinto, 1960).

Following up on the arguments developed in the previous section, recognition can be understood as part of a broader ambition—shared by Hegel and Verbeek—of challenging the concept of abstract freedom associated with the modern human subject of the European Enlightenment. Hegel's approach is not entirely dissimilar to that of Verbeek, as both emphasize the roles of phenomenology and mediation in allowing the concrete aspect of freedom to emerge through experience. However, while Verbeek sees human subjectivity as mediated by a technological object and thus co-constituted by nonhumans, Hegel conceives of subjectivity as mediated by an object *recognized to be another subject*.

Hegel's concept of recognition receives the most complete treatment in *The Phenomenology of Spirit* ([1807] 2018) and is introduced at a moment when human consciousness is developing more certainty about the world and its relation to it. Being already self-conscious at a primitive stage, human consciousness further evolves as it comes into contact with another self-consciousness. To affirm its independence from this object, self-consciousness undergoes what Hegel calls the "movement of recognizing" (p. 109). This phenomenological-dialectical movement is described in a concise and often overlooked passage known for its complexity. In broad outlines, it comprises a first moment of *externalization* of self-consciousness, initially getting "outside of itself" and existing "for itself in the other," followed by a second moment of *reconciliation* of self-consciousness with "itself in the other," thus becoming in "equality with itself again" while "setting the other free."

Hegel emphasizes that the movement must happen simultaneously for both self-consciousnesses so that, as one sets the other free and confirms the independence of the other, it also gains the same confirmation and freedom from its opposite. At the end of the movement of recognizing, Hegel concludes: "Each [self-consciousness] is, to itself, and in that of the other, an essence immediately existing for itself which at the same time is for itself in that way only through this mediation. They *recognize* themselves as *mutually recognizing each other*" (p. 110) (see Figure 2).

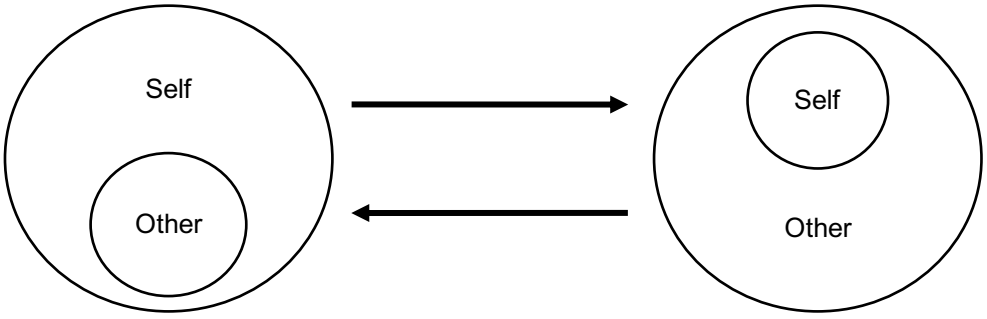

Figure 2. Mutual recognition of self-consciousnesses (based on Hegel, [1807] 2018). The inner circles represent the certainty of having the other as part of the self, a whole "we". These are not to be mistaken for independent subjects existing separately within oneself.

As Williams explains, in mutual recognition, the other plays a fundamental mediating role in the development of self-consciousness from its primitive state:

> …the self [in its fullness] is not initially present to itself, much less transparent to itself. The immediate self does not yet know what it is. What it is, is still implicit and must become explicit to it. It can become explicit to itself, that is, discover what it is, only through the mediation of an other. Self-consciousness requires an other to confirm and transform its own self-understanding (Williams, 1997, p. 52).

This transformation is such that self-consciousness is both *relativized*, in the sense that it becomes certain of itself as one self-consciousness opposed to another equal self-consciousness, and *enlarged*, for the other becomes part of self-consciousness reconciliation with itself. A recognized self-consciousness entails "the unity of its oppositions in their complete freedom and self-sufficiency" or "the *I* that is *we* and the *we* that is *I*" (Hegel, 2018, p. 108).

In a later work, Hegel explains that genuine freedom requires overcoming the "particularized" independence of the initially self-enclosed subject into the "universalized" independence of an intersubjective being (Petry, 1978, p. 71). This is achieved not by having both self-consciousness impenetrable and essentially unknown to one another, nor by fusing them into an indistinct whole of sameness—a "we" that is not an "I." Instead, "subjects remain independent in their identity, and are identical in their independence" (Williams, 1997, p. 73); in other words, they preserve their identity and difference in a dialectical fashion.

For Williams (1997, p. xi), mutual recognition is the "existential phenomenological shape of [Hegel's] concept of freedom." As Hegel puts it: "I am only truly free when the other is also free and is recognized as such by me" (Petry, 1978, p. 57). However, he also described, in greater detail, another situation in which the encounter between self-consciousnesses leads to a form of recognition forged through *coercion*—the master-slave dialectic. Succinctly, instead of recognizing each other as free, what would be obtained according to the pure concept of *mutual* recognition, in this dialectic, two self-consciousnesses enter a life-and-death struggle resulting in an unequal relation among them where one is only *recognized*, and the other is only *recognizing*. The first is the *master*, and the second is the *slave*.

At first, it appears that the master succeeds in becoming certain of his independence. By dominating the servile self-consciousness, commanding, and fully enjoying the fruits of his labor, the master enforces his own will over the other. The slave, in turn, does not have his independent self-consciousness confirmed by the master because it is treated as a given object among other natural ones. However, this condition gets subverted for both as the master realizes his essential dependence on the object of slave labor and as the slave realizes, in shaping that object, his own relative autonomy.

The master-slave dialectic is one of the most debated passages in the history of philosophy. Our reading of it builds on the preceding analysis of mutual recognition as well as other Marxist-inspired interpretations of the passage (Kojève, 2012; Lukács, 1976). The latter has influenced several concrete analyses of historical struggles in society, including those between Black and White people (Fanon, 2008), men and women (Beauvoir, 2011), and, more generally, oppressors and the oppressed (Freire, 1970; Vieira Pinto, 1960)[2].

For present purposes, we focus on the final part of the dialectic, detailed below, where the slave's turn toward the object of labor can be seen as both a successful move away from the master's domination and a viable alternative for the free development of self-consciousness. We begin with a close reading of the intricate presentation of *The Phenomenology of Spirit* and juxtapose that text with later writings and lectures, namely volume three of Hegel's

[2] Recent interpretations of Hegel within the philosophy of technology also emphasize concrete "struggles for recognition," questioning whether artificial intelligence (AI) or automation technologies more broadly can be a genuine other to humans (Coeckelbergh, 2015; Gertz, 2018).

Encyclopaedia of the Philosophical Sciences in Outline (2010) and posthumously published lecture notes taken by his students (Hegel, 2007a; Petry, 1978).

The last stage begins with the moment of *externalization* of servile self-consciousness, in line with our previous explanation of the movement of recognizing. Assuming the standpoint of the slave, Hegel remarks that self-consciousness becomes objectified as *service* for the master. Although independent as an object "in-itself," this self-externalization of servile consciousness is, according to Hegel, not yet "for" the slave because it is the master who enforces his will. Within this moment, obedient labor—though an act performed by the slave—"is really the master's own doing" (Hegel, [1807] 2018, p. 114).

However, by repeatedly enacting his service for the master, the slave starts producing "something that *endures*" (p. 115). What the enduring quality of the work does, for the slave, is to negate the existence of an object that is produced solely to fulfill the master's desire and disappear: "Work is desire *held in check*, it is vanishing *staved off*" (p. 115). Moreover, service acquires, for him, the positive dimension of a stable, self-sufficient object: "The negative relation to the object becomes the *form* of the object," it is a "formative *doing* [that has the] element of lasting" (p. 115).

To be sure, this formative action depends not only on the slave but also on the reciprocal actions of the master, who intends the results produced by the slave. According to Hegel:

> Since the means of mastery, the servant, has also to be kept alive, one aspect of this relationship consists of community of need and concern for its satisfaction. Crude destruction of the immediate object is therefore replaced by the acquisition, conservation and formation of it, and the object is treated as the mediating factor… (Petry, 1978, p. 65)

This reciprocal action is, however, unequal. The master seeks only to satisfy his own desire, while the slave does not desire to serve the master but does so out of fear of death. The master, in turn, does not want the slave to die and lose that service; therefore, he provides for the slave's sustenance in the form of life preservation. Nevertheless, the master does not fulfill the slave's desires through an equally enduring service. Instead, he acts merely to keep the slave's instrumentalized body alive.

For Hegel, the critical difference, or even advantage, of the slave is that only he *experiences* the mediating object (i.e., service) as a self-externality connected to another self-consciousness. This occurs precisely because servile self-consciousness, coerced into serving the master, could not remain within the primitive singularity of his existence "for-itself." Instead, it had to extend through the mediating object (its self-externalization) into an other.

> In that the servant works for the master, and not therefore exclusively in the interest of his own singularity, his desire acquires the breadth of not being confined to himself, but of also including that of another. It is thus that he raises himself above the selfish singularity of his natural will. To the extent that he does so, his worth is greater than that of the master, who is involved in his self-seeking, sees in the servant only his own immediate will… (Petry, 1978, p. 67)

Ultimately, through his formgiving activity, servile self-consciousness "comes round to itself" and "comes to an intuition of self-sufficient being *as its own self*" (Hegel, [1808] 2018, p. 115)

> In culturally formative activity, being-for-itself becomes for [the slave] *his own* being for-itself, and he attains the consciousness that he himself is in and for himself (p. 116).

In other words, through service, the slave "works off his natural existence," meaning he becomes cultivated and socially formed. By giving a particular form to service—be that through

a trained body or through another material object—servile self-consciousness is able to *reconcile* with itself in the other. We hold that this represents the second moment in the movement of recognizing introduced earlier.

However, there are two significant peculiarities in how this movement is actualized in the context of the master-slave dialectic. First, the reflexive turn of self-consciousness into itself depends not only on the mediation of its objectification as a natural working body but also, crucially, it *necessitates* the reciprocal actions of master and slave in giving that object a cultural form. Second, the confirmation of servile self-consciousness mediated by this culturally-formed object does not conform with the mutual basis of pure recognition but still "exhibits the aspect of inequality" (Hegel, 2018, p. 110). In a later passage, Hegel concludes that the evolution of servile self-consciousness is just the "*beginning* of true freedom" (Petry, 1978, p. 67), a freedom that is only attained when the slave overcomes its "particularity" for its "universality" and, on the other hand, when the master realizes that what is for the slave is also true for himself.

In most of his writings and lecture notes, including *The Phenomenology of Spirit*, Hegel does not explicitly demonstrate how a universal self-consciousness emerges as a resolution to the master-slave dialectic. However, a student's lecture notes (Hegel, 2007a, p. 193) suggest that, for Hegel, the struggle can lead directly to universal self-consciousness. Specifically, the passage argues that by negating its own will and obeying the master, the slave becomes positively liberated from its particularity, thereby attaining true freedom. It is well known that Hegel regarded the oppressive relationship between master and slave as a "necessary and relatively justified" moment in the historical evolution of self-consciousness (Hegel, 2007b, p. 161). This belief served as the foundation for his apologia of European colonialism, racism, and the modern disciplinary state (Jaarte, 2024).

We do not share Hegel's view on these matters and, therefore, reject the idea that obedience to another's will can simultaneously be an expression of one's own will and a liberation from natural, uncultured desires. The universal nature of self-consciousness, as noted before, entails the mutual recognition of self and other *as free beings*. It is when self-consciousness, as Hegel puts it, "knows itself to be recognized by its free counterpart, and knows that it knows this in so far as it recognizes the other and knows it to be free" (Petry, 1978, p. 71). In our understanding, this is clearly not yet the case for the servile self-consciousness, which gains its relative freedom unilaterally by recognizing itself in the form of service, without experiencing the master's recognition of itself as a free being. We call *coerced* recognition the mode of recognition where human consciousness self-identifies with the object it forms in obedience to the will of an other.

To conclude, we derive two key points from our analysis of Hegelian recognition. First, in the master-slave dialectic, we find incipient accounts both of *technological mediation*—specifically, in the slave labor that serves as an "instrument" mediating two self-consciousnesses—and *design*, in the formgiving actions of master and slave. This provides a foundation for relating Hegel's ethics of recognition to postphenomenology's design ethics discussed in the previous section. Second, mutual (i.e., uncoerced) recognition between self and other establishes the intersubjective normative criterion for technological mediations to promote freedom. Unlike postphenomenology's individualistic conception of relational freedom, where humans "moralize" themselves in interaction with nonhuman technology, according to Hegel, freedom only comes about in relations where humans recognize one another as self-determining subjects. As explained in the next section, this is not achieved under userism, where society grants designers the privilege of commanding the activity of giving form to computer interfaces, thereby subordinating users to it.

4 REVEALING USER OPPRESSION IN COERCIVE SERVICE INTERFACES

We now synthesize key findings from the previous two sections into an ethics framework of technology-mediated recognition for HCI design. This framework is founded on the understanding that (1) "users" and "designers" are related to one another through computers (in accordance with Verbeek's postphenomenology of technology-mediated morality); (2) they are dialectically constituted as "self" and "other" in this computer-mediated relation (in accordance with Hegel's dialectical movement of recognizing); and (3) they interact through a service interface (in accordance with Secomandi & Snelders, 2013), which is the materialized form of their computer-mediated work.

We characterize technology-mediated recognition as both *interobjective*, because it involves the co-constitution of human subjects (users and designers) through nonhuman objects (technologies) and *intersubjective*, because human subjects mediate one another through technological objects. The service interface of computers may enable the experience of freedom when these interfaces support mutual recognition among self-determining human beings. However, as the present objective of this article is to underpin the concept of user oppression through computers, we focus on the technology-mediated relation of coerced recognition, not mutual recognition.

As shown in previous research, users are generally oppressed in HCI design when they are construed as lay or underdeveloped people who cannot shape computer technologies in the same way that designers can (Gonzatto & van Amstel, 2022). For example, they can accept the terms of use and many other confirmation dialogues even against their best interests, in the hopes of figuring out what to use for their intent (Brilmyer & Lee, 2023). Under userism, designers reduce users to preconceived stereotypes and misrepresent or undervalue their capacity to shape computers according to their own intentions. Designers can then stand on the higher ground of professional heroes (Spinuzzi, 2003) who can save users from their ignorance by designing computers that almost never require thinking while interacting with them (Krug, 2006). By such means, designers assume a dominant position at the expense of oppressing other people's potential to transform their existence by giving form to service interfaces[3].

From a phenomenological-dialectical perspective, user oppression can be understood as a movement of coerced recognition through the service interface (Figure 3). When interacting with computers, users self-identify with the service interface and recognize within it the objectified desire of another—namely, the designers. This movement consists of two moments, each with its respective outcome.

First, users' self-consciousness is externalized in the service interface as a form they produce in obedience to designers (arrows from left to right). In the next moment (arrows from right to left), users reconcile with this externalized form as a self-consciousness produced according to the will of designers. Notably, giving form to the service interface under designers' coercion is experienced by users as their own doing.

In the end, coerced recognition means that users experience themselves as *less-than-designer* humans, as they are unable to materialize their own will in the service interface despite giving form to it. They are the *oppressed* in the computer-mediated relation with designers. Conversely, designers are experienced by users through the service interface as *more-than-user* humans, since it is their will that ultimately takes form in the service interface. They are the

[3] It is true that designers can also find themselves oppressed in relation to others, including the corporations they work for, due to class, gender, or race discrimination (Gonzatto & van Amstel, 2022). However, specifically within userism, they are positioned as the oppressors of the other humans they design for.

oppressors in this relationship. Because users do not experience both as equally free to shape the service interface, true recognition between users and designers remains unattainable.

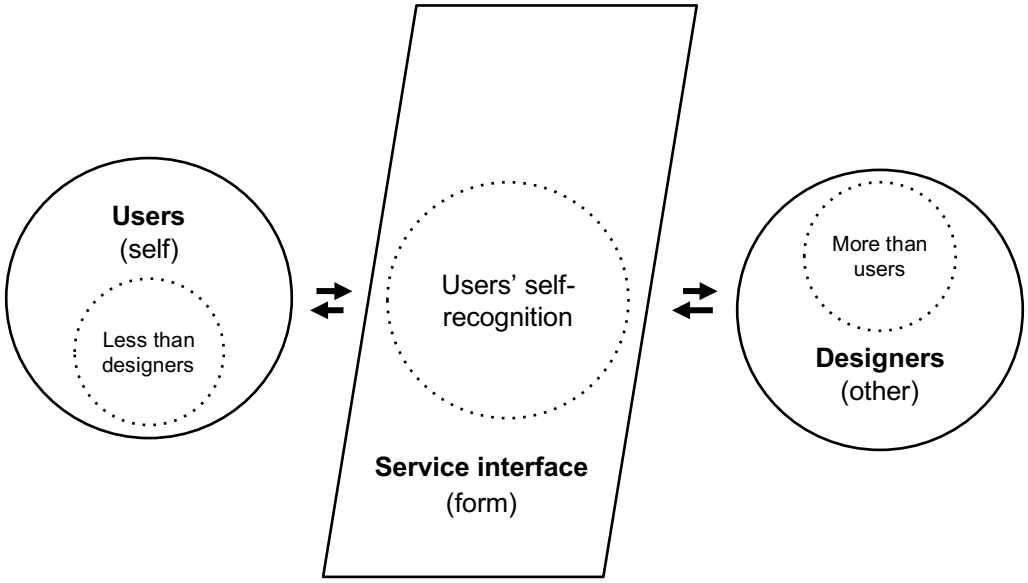

Figure 3. Users' coerced self-recognition through the service interface. The dotted outlines of the inner circles represent conflicting actualizations of users and designers, integrating a whole that is not a "we" because it is founded on their unequal relation.

The recent wave of critical studies of data, algorithms, and AI from social-political perspectives provides many notable cases of user oppression through the design of computers, usually involving some kind of screen-based device. For example, Black people who see websearch results on "black girls" displaying an overrepresented amount of pornographic content (Noble, 2018); insurance holders in vulnerable conditions who get red-flagged for fraud investigation and have their health care plans instantly suspended (Eubanks, 2018); and warehouse workers who are confronted by the extreme level of bodily agility, precision, and strength required when working with robots (Crawford, 2021).

Instead of adding to the naïve understanding of such emerging technologies as an existential threat to all humankind, our analysis of coerced recognition enables us to critically reposition the threat as related to historically racialized, gendered, and exploited humans. Moreover, they help us further establish the contours of how computer-mediated user oppression intersects with these other types of social oppression.

Let us unpack this situation with a brief analysis of the discrimination transgender people can face during airport security screenings (see Costanza-Chock, 2020). Constanza-Chock, who is a trans woman, describes how her body gets flagged as a potential security risk by full-body scan technology designed and operated according to a binary gender norm. Specifically, the body scan will often highlight an anomaly in the breast or groin region of trans travelers due to the mismatch between the formalized gendered shape of a human body and their actual body shape. In such cases, transgender travelers are typically detained after the scan for further searches, inquiries, and clearance—a process that usually requires them to disclose and explain their trans status. This is humiliating for two reasons. First, trans people seek recognition based on their expressed gender, not their biologically assigned gender. Second, cisgender people do not have to endure this extra security procedure.

By applying the ethics framework proposed above, we can understand this case as one of coerced recognition by design. The oppression experienced by transgender travelers stems, within the scope of userism, from the fact that they must recognize themselves as the "deviant" body they help to form at the service interface of the full-body scanner. This recognition cannot simply be "accepted" or "rejected" in order to move along unscathed. Turning a blind eye to the flagged anomaly, despite their certainty that they do not pose a security threat, may allow them to proceed to a pat-down, but not without a sense of indignity, however subtle. Conversely, refusing to identify with "that person" flagged in the image does not bring them any closer to boarding their planes.

No—transgender travelers *must* confront the image presented on the scanner's screen as their own, and to do so, they must become *users* of the scanner. Yet, in actively contributing their body to the formation of this image, their will is contradicted. If that were not the case, they would be able to proceed undisturbed and reach their destinations like other "normal" people, assuring both themselves and society that they are not a threat. This is made impossible *precisely* because designers—whether deliberately or not—have coerced them into shaping a service interface that opposes their innermost desire to be for themselves.

This particular service interface effectively obstructs transgender people from continuing their historical path toward trans affirmation and acceptance. Thus, by enforcing obedience to the will of others and failing to materialize the desires of transgender people, the designed interface denies them full humanization. For to become a human who uses computers, one must be "userized" through the service interface and misrecognized as a gender-deviant person.

Costanza-Chock is not only a transgender woman but also well-versed in science and technology studies and design, hence, she recognizes that the source of her oppression lies in "airport security technology, databases, algorithms, risk assessment, and practices […] all designed based on the assumption that there are only two genders, and that gender presentation will conform with so-called biological sex" (2020, p. 4). She even identifies the practice of user interface (UI) design as responsible for giving a particular gender-normative form to airport security screening.

Her understanding of formgiving is, therefore, compatible with our interpretations of both Verbeek and Hegel. The former views design as the activity of morally shaping material technologies—an activity that can, in principle, be performed by others beyond a specific professional specialization. The latter conceives of recognition as an intersubjective process shaped by one's relations with individuals, organizations, or the state.

Many other users of full-body airport scanners, however, may not be as precise in identifying designers and their role in user oppression. Nevertheless, the indirect influence of designers remains recoverable within the experience and can be revealed by raising their awareness of how computer technology is shaped for human use.

As Ihde (2012, p. 54) taught us, a rigorous postphenomenological analysis must begin with—but not stop at—what is immediately apprehended in "naïve" perception. It ought to delve deep into the interpretative possibilities of phenomena and, as we argue, into the intentions of designers behind computer technology. Once this understanding is gained, it "erodes" any previous way of interacting with computers. While users may still "go back" and have their naïve understanding of computers re-fulfilled in experience, it will no longer be the only possible way to perceive these phenomena.

Hegel, in turn, helps us advance the view that computers can be experienced as materializing social struggles—in this case, between designers and users. While we do not share his belief that coerced obedience to others is a necessary step toward human emancipation, we acknowledge that users can heighten their self-consciousness either by recognizing their

obedience or by actively resisting the formgiving intentions of designers. However, neither of these actions can truly liberate them from userism if designers—their "masters"—remain unaffected by their actions.

Moreover, as long as userism persists, from the users' perspective designers are also being dehumanized. By commanding users to shape the service interface of computers—and thereby becoming "more than users"—designers' elevated stance is not perceived to be freely obtained. Rather, users discover that designers' formgiving intentions can only be materialized in the service interface through others: the users themselves. This dependence binds designers to users—their "slaves"—and is experienced by users as a lack of complete freedom on the part of designers to shape computers.

To the extent that users and designers consent to coerced recognition through the service interface, they may mistakenly perceive computer-mediated oppression as a natural way of becoming human through others. In our final section, we suggest that overcoming userist HCI design entails fighting against coerced recognition through the service interface from both sides of the equation. In other words, users and designers must unite against their oppressive relations. This requires moving beyond the prevailing tool perspective for computer design.

5 FROM TOOL TO SERVICE PERSPECTIVE

> I do battle for the creation of a human world—that is, of a world of reciprocal recognitions (Fanon, 2008, p. 170).

To lay the path for mutual recognition in HCI design, we will refer to a classic in human rights: Frantz Fanon. This Martinican Black man dedicated his work and life to the revolution in Algeria, in the hopes that it would establish the formerly colonized people as legal subjects with voting rights. Many newly sovereign nations have now attained that through revolution, diplomacy, or legislative reform. However, recognitive struggles remain current to this day, not just for racial oppression, but for other forms of oppression. This is why many advocates of human rights, like Silvio Almeida[4]—who provided the opening quote of this article—, now prioritize a slower and perhaps more stable process of achieving mutual recognition: through democratic processes of representation, negotiation, and commitment.

We invite HCI designers to stand closer to those thinkers in the history of anti-racist, anti-sexist, and anti-colonialist struggles who fought against social oppression. We want to draw attention to the fact that in most contemporary societies, the ability to recognize and be recognized is less often founded on direct interpersonal encounters, in comparison to Hegel's time, and increasingly more mediated by technology, especially computers. Therefore, we must reckon with the intervening role of technology in mutual recognition, and specifically, we must reveal the structural features of computer-mediated recognition when it goes wrong and leads to user oppression.

As mentioned in the introduction, when it comes to phenomenological studies of interface design, the tool perspective, building on Heidegger's modes of handiness, is still dominant

[4] In September 2024, after the first version of this article was prepared, the Brazilian Minister of Human Rights and Citizenship was accused of sexual misconduct in the media and summarily dismissed by President Luiz Inácio Lula da Silva. Almeida vehemently denied the accusations, and the case remains under investigation by the Brazilian Federal Police. We have chosen not to remove the references to him because the case helps us make two important considerations. First, gaining recognition in one domain of systemic oppression (e.g., racism) does not preclude someone from acting as an oppressor in another domain (e.g., sexism). Second, under Brazil's current rule of law, the presumption of innocence and the right to be fully informed of any accusations must be duly recognized and upheld.

within HCI. Its normative standpoint is that "good" design is achieved as computers become *ready to hand* and transparent to users, thus not interfering as conspicuous objects in users' directedness toward skillfully manipulating other aspects of the world. As Winograd and Flores (1986, p. 164) explain, "a successful word processing device lets a person operate on the words and paragraphs displayed on the screen, without being aware of formulating and giving commands." This is contrasted with "bad design," which "forces the user to deal with complexities that belong to the wrong domain…one that is the province of the system designers and engineers" (Winograd & Flores, 1986, p. 165). The latter, a situation of breakdown in use, occurs, for example, when a user tries to send a message but experiences an error onscreen stating that "the mailbox server is reloading." On such occasions, "the typing was part of my world, but not the structure that emerges as I try to cope with the breakdown. But of course it did exist for someone else—for the people who created the device by a process of conscious design" (Winograd & Flores, 1986, p. 37).

Thus, Winograd and Flores acknowledge that the actions of designers can be revealed in the user experience of computer interfaces. Yet, for them, both domains ought to be kept separate (thus, the "my world" of the user, contrasted with the "province" of designers, in the above quotes). In other words, as long as interfaces are properly devised, designers should not become explicit to users but remain implicit alongside the rest of the computer equipment that withdraws from their experiences in the ready-to-hand condition. After all, the emergence of designers within the use experience would be associated with situations where the interface is found to be inoperant as a tool or *present at hand*.

To be sure, Winograd and Flores themselves caution against an altogether negative valuation of the tool in its presence at hand, for they understand this condition to be crucial for designers to grasp what interfaces should accomplish for users:

> A breakdown is not a negative situation to be avoided, but a situation of non-obviousness, in which the recognition that something is missing leads to unconcealing…some aspect of the network of tools that we are engaged in using. A breakdown reveals the nexus of relations necessary for us to accomplish our task. This creates a clear objective for design—to anticipate the forms of breakdown and provide a space of possibilities for action when they occur (Winograd & Flores, 1986, p. 165).

Capurro (1992) thinks that Winograd and Flores' analysis of breakdown in terms of a reversal in modes of handiness is oversimplified because Heidegger remarked that the readiness to hand of tools is not effaced when it is present to hand, but more exactly discovered *in* it. According to Capurro, this tool perspective also misses the more important point Heidegger makes about modern technology, such as the computer, which is that it affords the total "enframing" of the world as a standing reserve for human purposes.

Secomandi and Snelders (2013), in turn, argue that the Heideggerian handiness modes appropriated by Winograd and Flores lack the nuance of Ihde's (1990) postphenomenological analysis of human-technology relations in terms of embodiment, hermeneutic, alterity, and background relations. Specifically, these authors challenge the primacy of the ready-to-hand over the present-at-hand, as well as the claim that the former represents an ideal for interface design. They argue, instead, that the transparency of tools in use is never complete, nor is their conspicuousness to be understood as necessarily a breakdown in use.

Gonzatto and van Amstel (2022) and Gonzatto and van Amstel (2022) advance yet another critique of the tool perspective. They build on Álvaro Vieira Pinto's interpretation of Heidegger's modes of handiness from a historical perspective and the embedding of technology in social relations of domination and oppression. Special emphasis is placed on the particular historical circumstances in which technology can become unequally available as ready to hand for different social groups. What happens in userist HCI practices, these authors explain, is that

designers approach the readiness to hand of computers while disregarding users as others who may equally share the capacity to shape these technologies in order to become more than just oppressed subjects. This is a perspective we wish to build upon, as it introduces issues of intersubjectivity and ethics that have been poorly explored in the previous debate about the tool perspective within phenomenological HCI.

As mentioned before, Winograd and Flores briefly hinted at intersubjectivity when pointing out the intrusion of the "context" of design into that of use in the case of bad interface design. However, they identified no potential ethical dilemma when advocating for computer tools to always be made ready to hand. The same standpoint holds true for most other occasions where intersubjectivity was explicitly mentioned within phenomenological HCI research. For instance, when drawing on the social phenomenology of Schutz, Dourish (2001, p. 132) acknowledged that interface design involves the issue of how users are "able to understand the intentions and motivations of another party." However, he did not question the kind of intentions users might perceive designers as having toward themselves. Dourish's position, aligned with that of Winograd and Flores, simply bears on the efficient use of computers for practical and communicative purposes, having little significance for ethical problems regarding user-designer relations.

Finally, even in the rare occasions when phenomenological notions of intersubjectivity get associated with the ethics of computer technology, a clear role and responsibility for design is not made explicit. Capurro (1996), for example, develops an interesting perspective on the computer-mediated constitution of the self, anticipating Verbeek's own contribution and drawing both from Foucault's concept of technologies of the self and from Lévinas' face-to-face ethics. He asks: "How can we ensure that the benefits of information technologies are not only distributed equitably, but that they can also be used by people to shape their own lives?" (Capurro, 1996) However, this is not followed by an answer addressing this ethical issue on the level of user interface design.

At this juncture, we can reconnect with previous arguments presented in this article. Capurro brings Lévinas into the debate to posit the *other* within Foucault's process of moral subjectivation. Similarly, we have introduced Hegel, rather than Lévinas, to propose an intersubjective twist on Verbeek's Foucault-inspired framework of mediated morality. We have shown how Verbeek concluded that design is a moral activity *par excellence*, as the mediations materialized in technologies can influence users' self-constitution as free subjects.

We cautiously welcome Verbeek's general optimism with regard to the possibility of anticipating the moral effects of technological mediation, recently reiterated in a call to design new technologies to "prevent unwanted forms of power, or to deliberately inscribe power into technologies" (Verbeek, 2020, p. 145). However, the dialectical revision of his framework of mediated morality proposed in this article precludes the reduction of ethics to an affair involving individual human subjects who design and use nonhuman objects apart from each other, as Verbeek ultimately does. While we sympathize with his criticism of the Western humanism underlying contemporary technology ethics, we believe that existing discussions in postphenomenological philosophy of technology (and phenomenological HCI research) tend to reduce relationality to the mutual constitution of humans and nonhumans, overlooking the mutual constitution of humans *with one another*. Within phenomenological, dialectical, and existential philosophy, however, relationality is also understood in terms of intersubjectivity—our capacity to become human through other individuals, the family, and society at large, with nonhumans being just one part of these social relations. This broader perspective on relationality better enables us to see technologies as active mediators of interpersonal ethical relations. Overlooking this fact and getting fascinated by the nonhuman moral agency highlighted by postphenomenology may lead designers to disregard that humans can continue to have their freedom curtailed by other humans through technology.

Put differently, in the context of HCI, considering nonhuman agency in the ethical design of computers does not necessarily help counter computer-mediated human-to-human oppression. More than just acknowledging the mutual constitution of humans and nonhumans in computer-mediated relations, designers need to know how nonhumans can be employed to structure social oppression. They must understand that coerced recognition mediated by computers materializes the violence of users' dehumanization, and that blind obedience to designers' intentions does not guarantee freedom.

Returning to extant work in phenomenological HCI, we agree with Winograd and Flores (1986, p. xi) that "in designing tools we are designing ways of being." However, with a nod to Sherry Turkle (2010) and the fundamental contradiction she identified in contemporary computer-mediated practices, we might add "ways of being… *alone together* with others." The current limitation of HCI's tool perspective regarding intersubjectivity is especially concerning. When we disregard others or submerge them as part of the computer equipment that must withdraw from use experiences, thereby making human otherness unavailable at the interface level by design, we can more easily disregard people's condition as either oppressors or oppressed.

Let us consider the above case of full-body scanners in airport security. It would be unethical for HCI designers to create a ready-to-hand service interface that makes coerced recognition more transparent to transgender travelers if, in doing so, these users more easily accepted a disadvantaged position in relation to others. Designers could then shift the blame to technologies, databases, and algorithms themselves, or they could burden users to report abuse or retrain these systems when, in fact, it was them who originated user oppression. In other words, oppression would be made an *obviousness* to users by those operating "behind the screen," never to be noticed or challenged.

In reality, however, humans continually resist such attempts to obscure design intent, ensuring that those meant to be "hidden" by service interfaces inevitably show up in one way or another. This may occur through infrastructural inversion—e.g., when technical support has to be called after a breakdown in use (Star & Bowker, 2006)—, through a legal action taken by users against technology developers, or through rigorous phenomenological analysis, as we have done here.

An alternative to the tool perspective is possible. HCI design can move towards the full acknowledgment of the human-to-human *service* behind every computational technology. We contend here that service interfaces are about humans serving other humans through computers or other nonhuman technologies. This shift away from the tool perspective may profoundly impact how computers are designed. From an ethical standpoint, interface design is not, first and foremost, about giving form to computers for humans to accomplish practical or communicative tasks. It is about humans—whether designers or users—giving form to mediating technologies to mutually constitute their existence in a shared world.

Framing computing as a human-to-human service is a necessary step, we believe, to consolidate design ethics in HCI, a burgeoning field of research (Chivukula & Gray, 2025). Nelson and Stolterman (2000) are some of the few researchers referenced in the HCI literature who, like us, consider *serving others* a defining characteristic of design. They write about successful design arising when the others being served by designers "experience *the surprise of self recognition* between what emerges from a design process and their original expression of that which they dimly perceived as desirable in the beginning." This assertion carries deep undertones of Hegel's concept of recognition, which holds that self-consciousness can find satisfaction only through recognition by another self-consciousness. If we were, then, to clarify the service that computer users most profoundly desire, we might say: to become more fully human through others, including designers.

Computer interfaces should thus be understood as the materialization of a universal form of service among humans. Interfaces that do not serve for mutual recognition fail to fulfill

computers' primordial function—to create more evolved modes of being in freedom, which may eventually be alone, but are always *together through others*. Designing computers without the commitment to facilitate mutual recognition is an abdication of designers' social responsibility. Such practices can only reinforce a conservative stance toward social inequities, which are never arbitrary but historically constructed—computers being one of the means through which they persist. Dismantling social oppression in this context is not merely a moral duty for designers and users but a material challenge requiring new forms of service interfaces that overcome the designer-user divide. By designing, using, and being alone-together through service interfaces, we may reciprocally (re)cognize and (re)humanize ourselves on the path toward universal freedom.

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