User oppression in Human-Computer Interaction:
A dialectical-existential perspective

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1 Introduction

Users[1] are an existential condition for Human-Computer Interaction (HCI), working as a common ground between designers[2] concerning the people who engage with the products they develop (Hyysalo and Johnson, 2015). HCI uses this concept to define a dedicated object or a matter of concern within the larger Informatics area (Cooper and Bowers, 1995), playing the role of a user science, user research, or interdisciplinary user studies. Several theories, approaches, methods, and techniques lie around the so-called users (Cooper and Bowers, 1995; Grint and Woolgar, 1997; Gonzatto, 2018). HCI strives to represent users (Suchman, 2002; 2007) and, by doing so faithfully and accurately, seeks to legitimize itself as an academic field. HCI claims to develop knowledge on the so-called users' internal configuration (Nicolaci-da-Costa *et al.,* 2004), advocate for their interests (Cooper and Bowers, 1995; Cooper, 1993; Woolgar, 1990), place them at the center of the design (Vandenberghe and Slegers, 2016; Spinuzzi, 2003), protect them from security risks associated with usage errors (Pereira *et al.*, 2015), satisfy their human needs (Kaptelinin and Nardi, 2012), and make their life functionally easier (Bannon and Bødker, 1991).

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[1] We refer to users in the plural form to express our suspicion that these people can only use computers (Gonzatto, 2018; Grudin, 1993; Bannon, 1991). We also emphasize the plural form because we characterize these people as a historically underprivileged social group within Informatics and Computation (Gonzatto, 2018).

[2] By alleged designers, we refer to the social group that includes interaction designers and all Design, Computing and Informatics specializations that hold the privilege of defining computers' ends, including those who wear engineering's, scientist's, or entrepreneur's hats. We consider that this social group also constitutes a collective body, a collective designer (Ehn and Badham, 2002), a design body (Angelon and Van Amstel, 2021) that designs in tune with other social groups they are part of — typically, part of the same (developed) nation, (central) locality, (bourgeoisie) class, (man) gender, and (white) race (Sturm *et al.*, 2015; Suchman, 2002).

HCI theories typically define so-called users by how they relate to a system (Bardzell and Bardzell, 2015b), ranging from a physical body, an interactive information processor, an information receiver, a meaning producer, a consumer, or a worker. Kuutti (2001) organizes the body of work on this topic into four different waves: 1) users as cogs in a rational machine; 2) users as a source of errors for those who develop systems; 3) users as partners in social interactions; and 4) users as consumers. None of these waves, however, captures the existential condition of being a user or, better put, being a human that has gone through a process of *userization*[3] by own effort, by coercion, by education, or by any kind of motive that prevents developing further than a user by interacting with computers.

There are, nevertheless, some critical studies that problematize the ideological and rhetorical use of users in HCI. They identified users' as a mere scenic resource in the design space (Sharrock and Anderson, 1994), playing the role of naive (Bannon, 1991), exotic (Cooper and Bowers, 1995) people (at least in comparison to alleged designers), who become prey to usability problems and, for that same reason, demand the constant salvation of heroes who know their ways of interacting with computers (Spinuzzi, 2002; Cooper and Bowers, 1995; Lima and Almeida, 2016). These people are abstracted from their historical or community references (Bannon and Bødker, 1991; Oudshoorn, 1991), stereotyped (Melo, 2012), pathologized (Cooper and Bowers, 1995), disembodied (Lupton, 1995), and disempowered (Kerssens, 2016; Clement, 1994; Spinuzzi, 2002) to become passive beings on the designers' hands, similarly to an imaginary friend (Massanari, 2010). Sometimes they are instrumentalized to build and maintain information infrastructures (Star and Ruhleder, 1996), create content in social networks (Kushner, 2021), and work for free in heteromation (Ekbia and Nardi, 2017) — automation that relies upon invisible human labor like that provided by mechanical Turk platforms (Irani, 2015). The prevailing conceptualization of so-called users as abstract minds that freely interact with computers ignore the concrete characteristics of their physical bodies (Lupton, 1995; Klemmer *et al.*, 2006; Asaro, 2000), but also the equally concrete characteristics of their social bodies — race/ethnicity, sex/gender, class, disability, and others (Van Dijk *et al.*, 2014). Reading between the lines, we can see a fundamental ethical question coming across these critical studies: does HCI dehumanize people by treating them as mere users of computers?

The present research seeks to answer this question by framing the condition of being a user in the current HCI production relations as an oppression that reduces general people's participation in computer production. Computers are increasingly necessary to produce human existence in modernized societies. The oppression safeguards the privilege of designing computers to alleged designers while denying these same possibilities for those defined as users as if this was a natural, logical, or unavoidable production relation.

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[3] By *userization*, we mean human beings put into the user's existential condition. Paraphrasing Marx, Pelle Ehn (1988, p. 97) states: "A carpenter is a man who builds. Only under certain conditions does he become a wage worker. A hammer is a tool to hammer with. Only under certain conditions does it become capital." We can extend the paraphrasis to illuminate what *userization* means: "A person can be a person using a computer. Only under certain conditions does the person becomes a 'user'" (Gonzatto, 2018, pp. 245-246)

Scrutinizing this production relation may explain why there are so few considerations of the existential implications of becoming a user and developing further from that condition in HCI. Even participatory design that, in the past, questioned and fought the user oppression with concepts such as deskilling (Ehn, 1988), ended up being co-opted to reproduce the oppressive relations of production (Spinuzzi, 2002; Berg, 1998; Höök *et al.*, 2019; Ehn, 2017; Ehn, 2014). This issue requires seeking theoretical resources beyond Design, Computing, and Informatics and, perhaps, beyond the epistemic center of the academic world, the Global North.

By looking at our existential condition of being HCI users living and working in Brazil, we found plenty of theoretical resources to understand the user oppression in the works of the philosopher Álvaro Vieira Pinto (1909-1987), the educator Paulo Freire (1921-1997), and the dramaturg Augusto Boal (1931-2009), all of them Latin Americans[4] who fought oppression in Brazil and other nations, particularly, the remnants of colonialism. We bring these authors together in the dialectical theory of human existence (Van Amstel and Gonzatto, 2022; Gonzatto, 2018). These authors reflected upon the oppressed reality they lived in and developed a theory of the human being that is not bound to a fatalistic destiny. In this theory, all human beings have the becoming-more[5] ontological vocation, which means more or less developing to the full human potential (Freire, 1987; Vieira Pinto, 1969, p. 343). However, in a society divided by social groups, human reality is severely reduced by the oppressive interaction between these social groups. Becoming-more turns into becoming-less, and both the oppressed and the oppressor social groups lose human potential. Even though it is hard to resist oppression, the oppressed can still fight for liberation, re-humanize, and become more than expected from a specific existential condition. By extending this theory to the HCI field, we might contribute to distinguishing the oppressive from the liberating computer-mediated interactions.

This research aims to characterize the oppressive aspects of the user condition based on a historical and cultural analysis of the articulation of social groups within Informatics. We expect to find that the user social group had their computer-mediated production of existence denied, curtailed, or regulated by other social groups.

The next chapter describes the research design taken to choose and apply the dialectical theory of existence to provide some new insight into the user condition in HCI. Section 3 summarizes and discusses the current HCI theories on users, taking them as evidence of the historical development of users as a social group within Informatics. We introduce a dialectical-existential perspective over users in section 4, based on concepts like handiness, production of existence, and oppression. These concepts are then applied to computer-mediated oppression and the social division of labor in Informatics. Section 5 discusses how an ideological operation called userism conceals the user

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[4] Although they were born and lived for most of their lives in Brazil, Vieira Pinto, Boal and Freire had a wide range of activities in Latin America (mainly in Argentina, Peru, and Chile), where they lived during their exile due to the military dictatorship in Brazil.

[5] Becoming-more (*ser-mais*) is a central concept in Paulo Freire's (1987) ontology. The human being is an unfinished, incomplete being, and has to develop itself from the social relations in the world. The opposite of becoming-more is the becoming-less (*ser-menos*), the constant denial and curtailment of this development.

oppression in HCI production relations. The last section suggests a research agenda that considers userism within the burgeoning intersectional research on oppression in HCI and within experiments with new ways of developing and using computers for liberation.

2 Research method

This research stems from a broader design research program (Redström, 2017) inspired by the concept of designing for liberation (Van Amstel and Gonzatto, 2016). In this conceptual paper[6], we are concerned with the liberation of people from user oppression. Hence, we promote a reconceptualization of the user condition, using historical and cultural data on the phenomenon already available in literature.

This conceptual undertaking requires the integration of the available literature (Gilson and Goldberg, 2015) to identify the tensions, inconsistencies, and contradictions (Van de Ven, 1989) that keep the user condition an overlooked issue in HCI. We analyze and revise the concept of users in HCI based on a shared stance found among Latin American authors who have studied oppression (Álvaro Vieira Pinto, Paulo Freire, and Augusto Boal): the dialectical-existential perspective (Gonzatto, 2018). This conceptual paper assumes the dialectical-existential perspective as a method theory and the user's concept in HCI, Informatics, and Computation as a domain theory[7]. The method theory works as a conceptual tool to problematize and investigate the domain theory. We set up this research design to deal with overlooked issues while opening up possibilities for new research avenues. We expect the review and synthesis of these works may disclose the characteristic structure of the user oppression in HCI ontological determinations.

Taking the dialectical theory of existence as a method theory is justified based on the research object currently not being well-covered by current literature. This theory seems fit for the purpose as it has been crafted to deal with a range of similar objects: oppression, dehumanization, and ideology. The following paragraphs trace its historical roots and explain how we applied it to our research object.

The dialectical-existential perspective taken here has a dual root in Marx and Engels's historical-dialectical materialism and in Heidegger, Sartre, and Jaspers's existential-phenomenology. These philosophies have been already explored in HCI. For instance, existential-phenomenology underscores ontological design (Winograd and Flores, 1987), embodied interaction (Dourish, 2001),

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[6] Conceptual papers strive for the "integration and proposing new relationships among constructs" (Gilson and Goldberg, 2015, p. 127), by summarizing research, integrating literature, and generating new frameworks for future research (Gilson and Goldberg, 2015). Here we follow the suggestion of Rana and colleagues (2020, p. 6) in trying to: "identify inconsistencies by examining and synthesizing different concepts, justifying their contributions by presenting pertinent examples" in conceptual papers.

[7] Domain and method theory are relative positions. These are not absolute characteristics of the theories selected, but roles in a research methodology approach: "A domain theory refers to a particular set of knowledge on a substantive topic area situated in a field or domain [...] while a method theory can be defined as a meta-level conceptual system for studying the substantive issue(s) of the domain theory at hand." (Lukka and Vinnari, 2014, p. 1379).

postphenomenological design (Hauser, 2018), and other HCI approaches (Åhman, 2016; Torkildsby, 2012; Tanenbaum *et al.*, 2011; Karlström, 2006; 2007; Fallman, 2003; Svanaes, 2000; Capurro, 1992). As for historical-dialectical materialism, it lays the foundations for computer-mediated activity (Bødker, 1989; Kaptelinin and Nardi, 2012), the Human-Artifact Model (Bødker and Klokmose, 2011), and other HCI approaches (Kuutti, 1996, Engeström, 2006). There is also a smaller thread of derived works that combines both philosophies like the tool-perspective over HCI (Ehn and King, 1985), which was developed at the beginning of participatory design (Ehn, 1988). The subsequent work in participatory design has mostly focused on existential-phenomenology and other philosophies, leaving historical-dialectical philosophy behind.

The perspective we are developing here rejoins these two threads under a third philosophical tradition: the postcolonial thinking of the third world (Fanon, 2007), which considers the implication of underdevelopment (Furtado, 1961; Prebisch, 2011) and the oppressed human ontology (Freire, 1987; Vieira Pinto, 1960). Vieira Pinto formulated his critique of human ontology by admiring, devouring, digesting, assimilating, and celebrating existential phenomenology together with historical materialism, in what could be called an anthropophagic philosophical banquet (Van Amstel and Gonzatto, 2020). Based on this hybridization practice, Vieira Pinto developed a critique of ideology, consciousness, development, technology, and education that made sense in Brazil (Vieira Pinto, 1960; 1969; 2005). Inspired by Fanon and Amílcar Cabral, Paulo Freire took Vieira Pinto's ideas further to formulate his critique of banking education (Freire, 1987; 1997; 2000). Augusto Boal (2006) extended Fanon's and Freire's ideas to theater and aesthetics in general, while also drawing concepts and practices from psychoanalysis and social psychology (Boal, 2013).

As researchers working in the field of HCI in an underdeveloped nation, we feel compelled to explore further this philosophical anthropophagy. Aiming at an envisioning type of conceptual contribution (MacInnis, 2011), we structure our exploration with the five key elements of conceptual review papers[8] (Hulland, 2020):

- **Phase 1 problematizes the user's concept in HCI.** In the introduction section of this paper, we went through several studies on HCI that propose ways for understanding and criticizing the existential condition of users, raising the possibility of oppression relations in place;
- **Phase 2 introduces an HCI historical literature review on users' theories.** We identify and synthesize the extant knowledge in section 3 to summarize (Hulland, 2020) the users concept in HCI. Throughout the paper, we follow a hermeneutic process that reveal their underlying definitions of human beings;
- **Phase 3 reframes the user (human) condition according to the Latin American studies of oppressed ontology.** We made a *theoretical synthesis* (Hulland, 2020) of the works of

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[8] "The process of theory development and refinement can in turn be broken down into five more specific and distinct elements (also referred to as stages below): (1) establishing the scope of the domain under review, (2) integrating and synthesizing extant knowledge within the domain, (3) resolving inconsistencies, (4) highlighting gaps in the existing literature, and (5) setting an agenda for future research" (Hulland, 2020, p. 35).

Paulo Freire, Vieira Pinto, and Boal to integrate a conceptual framework called the dialectical-existential perspective over user oppression in section 4. As the authors we refer to have developed their ideas mainly between the 1960s and 1980s, we perform some revisions (Hulland, 2020) to bring their ideas closer to the contemporary use of computer mediation (subsection 4.2) and the social division of Informatics (subsection 4.3);

- **Phase 4 applies the dialectical theory of existence to scrutinize the user condition**. Section 5 discusses the implications of the reconceptualization of users, mainly regarding the underlying hierarchy between designers and users, the role of ideology, politics, and handiness relationships in user oppression. We then suggest calling userism the material and symbolic strategies that conceal and justify the historical user oppression.

- **Phase 5 sets an agenda for anti-userist HCI research.** Section 6 discusses the limitations and contributions of this conceptual paper findings, pointing out avenues for future research.

3 Current theories of users in HCI

Theories are critical to any knowledge field. They help abstract reality in a structured way, offering a systematized view of certain phenomena in the absence or preparation for empirical work (Trentini, 1987). Historically, theories have become the foundation, reasoning, and justification for academic disciplines and research programs in HCI like other fields of inquiry (Rogers, 2012). A new perspective over users in HCI that is respectful to this historical accumulation of knowledge must first consider the earlier HCI theories on the users.

Terry Winograd (2011) organizes the accumulated knowledge on what it means to be a user in HCI in seven existential possibilities: a) a physical body; b) a being who understands natural language; c) an information processor; d) a worker in an organization; e) an information seeker; f) a social entity, and g) a source of meaning. These conditions correspond, respectively, to the following fields that contributed to shaping HCI's history: a) Ergonomics; b) Communication; c) Psychology; d) Management; e) Information Science; f) Sociology; and g) Anthropology. As Merkle (2002) pointed out, even if HCI sought to reduce disciplinary contributions in its first years of existence, it is possible to say that the field is increasingly more open to interdisciplinary exchanges. Subsequent studies have attested this opening (Carroll, 2003; Löwgren and Stolterman, 2004; Rogers, 2012), which created the conditions for the emergence of critical perspectives over the so-called users.

HCI research from the late 1980s (Suchman, 1987; Winograd and Flores, 1987; Ehn, 1988; Bødker, 1989) heavily criticized the mechanistic interaction theories of the early 1980s (e.g. Norman, 1986). The critics highlighted the importance of considering the world and reality together with the human actors and their artifacts in use. In the 1990s, Science, Technology and Society (STS) works (Suchman, 1993; Grint and Woolgar, 1997; Thomas, 1995; Star and Ruhleder, 1996) analyzed the role of discourses on users in the social construction of reality. In ubiquitous computing, a particular

approach of attending to the physical embodiment has risen as an alternative conception for users (Dourish, 2001). In the 2010s and 2020s, the gendered and racialized approaches to users were denounced by feminist theories (Bradley *et al.*, 2015; Bardzell and Bardzell, 2015b), queer theory (Light, 2011), critical race theory (Gary and Vines, 2013; Ogbonnaya-Ogburu *et al.*, 2020), postcolonial theory (Irani *et al.*, 2010), decolonial theory (Bidwell, 2016; Alvarado Garcia, 2021), and by others (for a summary of counter-hegemonic HCI theories, see Silva *et al.*, 2020 and Bardzell *et al.*, 2018).

Despite the spatial and conceptual expansion of users in HCI, their historical development remains an issue to be explored. To account for the possible development of so-called users as a social group, we will take the dialectical-existential perspective over human ontology, which considers humans as unfinished beings, always under construction, and in development (Freire, 1987). This perspective picks up an almost forgotten research thread in HCI: that the so-called users are learners, environment modifiers, and, most importantly, people trying to become "someone else" (Kuutti, 2001).

4 The dialectical-existential perspective over users

When defining who is and who is not part of the users social group, HCI theories presuppose an ontological foundation of what human beings are and how they develop (or not) by using computer technology[9]. In existential terms, HCI theories state that human beings shape their tools only for these tools to shape humans back as they get into use (Winograd and Flores, 1987). However, in practice, HCI turns this existential condition into an opportunity: "We [designers] are redefining and creating what it means to be human in this new physical/virtual integrated reality -- we are not just designing user interfaces, we are designing users" (Bolas, 2014, p. 1).

Critics have pointed out that this approach entails conceiving humans as objects of design activity, instead of as subjects (Redström, 2006; Van Amstel *et al.*, 2015; Bardzell and Bardzell, 2015b). However, this objectification (becoming-less) has not been framed as oppression by these critics. By integrating contributions from Paulo Freire, Vieira Pinto, and Boal, we aim to investigate how this process curtails human ontology. In the dialectical theory of existence, human beings are shaped by the need to produce their existence from nature instead of looking for nature to provide what they need (Vieira Pinto, 2005). Due to this production imperative, humans develop a dynamic relationship with reality, constantly altering and being altered by productive work (Gonzatto, 2018). Humans live as "a social being, in the state of unfinishedness, whose essence is always in transformation, situated in a reality that defines them but which they actively act upon, in sum, producing the social existence from the transformation of the world" (Gonzatto, 2018, pp. 52-53). Human beings develop further than

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[9] As Bannon (1986, p. 26) writes: "any artifact that we design embodies a theory not only of the domain for which it is applicable, but also a theory of the human user at the other end." This also reverberates in the representations designed (design) and used to design (metadesign) (Bødker, 1998).

any natural determinations could allow them to by transforming the world. In each social group, the conditions for working upon reality stems from previous work done by the same or other social groups. Vieira Pinto (1960; 1969) define that historical relationship as handiness, the accumulated work of technique, tools, and spaces that is *at hand* at different degrees to the people who integrate a specific social group (Gonzatto, 2014; Gonzatto and Merkle, 2016). Handiness shapes human social groups as much as human social groups shape handiness, in a dialectical relationship.

The historical process of developing handiness is related to what Vieira Pinto, Freire, and Boal called humanization. Humans need to create conditions to act in more elaborate ways to become-more, and, therefore, need to work upon the world in which they are positioned, using old techniques to create new ones that reflect increased consciousness of their world (Vieira Pinto, 2005). In this perspective, the technique cannot be separated from humans, as they are what they are precisely because they are technical. After all, humans can make themselves out of nature and out of previous work done by other humans (Vieira Pinto, 2005). The production of human existence requires the reproduction of the best possible techniques available in a certain handiness. However, due to the division of labor, power hierarchies, and international relations, these techniques may not be available for some social groups. For example, in the case of so-called users, the advanced computational techniques are not available or are hidden under obscure configurations. Underestimation, victimization, and paternalism are typical strategies used by privileged social groups to develop their handiness at the expense of exploiting another social group's handiness. Humanization, therefore, must face the opposite process of dehumanization, which curtails handiness development in an oppression relation.

4.1 Oppression as an existential-dialectical relation

The historically sustained dehumanization effort from one social group towards the other leads to establishing a social relation called oppression. In this relation, one social group denies the ontological potential for human development of another social group (Boal, 2006; Freire, 1987), which justifies handiness inequality and the preservation of privileges (Vieira Pinto, 2005). By looking at its developed handiness, the oppressors feel more developed as human beings and, therefore, deserving those privileges. Conversely, by looking at its underdeveloped handiness, the oppressed feel deserving of the deprivations for being less human. These social groups look naively at their relationship as natural and unavoidable, albeit occasionally unfair (Boal, 2006).

Individual merit does not matter because privileges are granted, inherited, or guaranteed through laws, norms, and everyday gestures. Similarly, an oppressed person does not need to do anything against the oppressors to be oppressed. The oppressors constantly deny the humanity of the oppressed through symbolic violence, taste, aesthetics, politics, ideologies, strategies, and methodologies, avoiding as much as possible their privileges to become general rights (Figure 1). By denying or ignoring oppression while benefiting from it, oppressors dehumanize themselves and

reduce their possibilities of becoming-more (Freire, 1987). While busy maintaining their position, oppressors do not develop new ways of being and relating to other people (Vieira Pinto, 1960; 1969, p. 370).
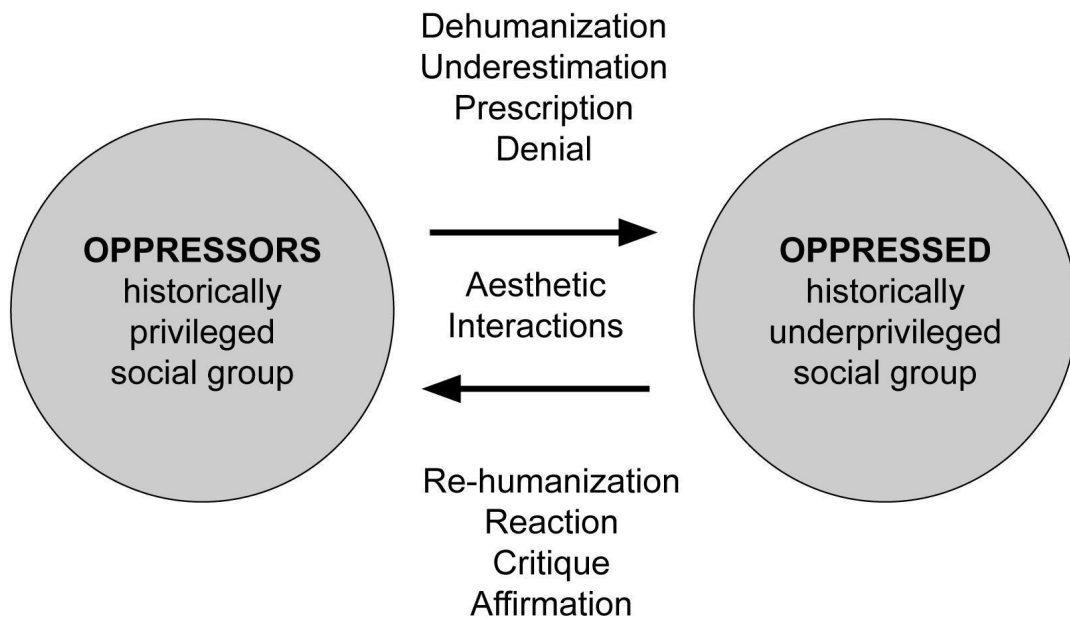
Dehumanization
Underestimation
Prescription
Denial

OPPRESSORS
historically
privileged
social group

Aesthetic
Interactions

OPPRESSED
historically
underprivileged
social group

Re-humanization
Reaction
Critique
Affirmation

Figure 1. Oppression relation based on Freire (1987), Boal (2006), and Vieira Pinto (2005)

In this theory, oppression is not a generic term to designate a personal discomfort, a specific problem, or dispute between two people. Instead, it is a historical relationship between social groups that establishes an objective difference in the conditions for the production of existence. It is experienced and felt by individuals through aesthetic interactions (Boal, 2006) but, more importantly, sustained by the historical participation of individuals in social groups. Only at the social group level can one understand oppression in its totality. Individual isolated actions cannot exert or overcome oppression, as it depends on other individuals for sustained effect (Boal, 2005).

Conversely, when an oppressed individual adopts the techniques of the oppressor with the same purposes, that individual joins the oppressor side, even if temporarily. That does not mean the oppressed, as a social group, are destined to take the position of the oppressor and establish an inverted relation. On the contrary, in re-humanizing, the oppressed tend to liberate both the oppressed and the oppressors from that relation. Only the oppressed have the concrete need and agency to liberate themselves from oppression and, consequently, have the moral duty of freeing the oppressor from oppression, even if that means fighting that same oppressor (Freire, 1987). Overcoming oppression requires producing new social relationships (a dialectical synthesis) that enable unprecedented forms of existence. The first step is raising the consciousness of unfair conditions and realizing the possibilities for liberation, de-alienation, and reaffirmation of *being for the self* in contrast

to the historical *being for the other* (Freire, 1987; Vieira Pinto, 1969). Oppression is only overcome when a new contradiction between social groups establishes itself, taking the humanization process to a new level in human history (Vieira Pinto, 1960).

4.2 Computer-mediated oppression

Developing techniques is at the heart of the humanization process (Vieira Pinto, 2005). Techniques originate from human beings, and since the latter is always in a state of unfinishedness (Freire, 2000), the former is constantly under development (Vieira Pinto, 2005). Techniques originate from the humanization process and contribute to human development. However, when they emerge in a society with antagonist social groups, they may also serve the dehumanization process (Vieira Pinto, 2005). In this deviation from its existential purpose, technique prevents the general development of human faculties. Only a few supposedly gifted individuals with all the necessary incentives, resources, and information can develop the necessary human faculties to master specific techniques, which also works as a de facto privilege. According to Vieira Pinto (2005), the designing faculty was and remains essential for the humanization of human beings, but it has become a class privilege in industrial society:

> […] the essential character of human consciousness, that of living in a future projection of the self, of permanently creating purposes that drag modifying reality actions, becomes monopolized by an ideological formulation clearly planned to lead the majority of humanity to believe that it is not the design of humankind, but that of the selected leading group, which has the privilege of shaping the future. (Vieira Pinto, 2005, Vol. 1, p. 353).

Vieira Pinto (1960; 2005) denounced the developed nations' use of techniques to maintain the underdevelopment condition of the third world — whether through importing instruments, machines, and discourses on the present and the future of technology. Similarly, Freire (1997) argues that the education faculty has become a privileged technique for culturally invading colonized people. Moreover, for Boal (2000; 2006), the professional actor embodied the theater faculty once politics employed art to disseminate privilege preservation ideologies.

According to the dialectical theory of existence, every human being has the designing, education, theater, and other creative faculties, yet specific social relations prevent them from developing these faculties to their full potential. For instance, in the capitalist mode of production, underprivileged social groups are stimulated to develop these faculties, but only up to a point they become a reliable source of surplus value for capitalists (Antunes, 2018). Cultural alienation separates the worker from the technique employed by the work, preventing the autonomous development of human faculties (Vieira Pinto, 2005). The worker believes it is only worthy of developing such faculties if these have good exchange values in the labor market. The monopoly over the means of production and the deregulation of the value system, which are at the heart of the capitalist mode of production (Marx,

2019), results in a privileged structure for human development. The techniques that could be used to liberate people end up being used to oppress them.

Computer techniques are no different in this regard. When computer technology emerged in the 1950s and the 1960s, the oppressors ensured the oppressed would feel threatened by job loss to automation or by electronic brain governance (Vieira Pinto, 2005). In this way, the oppressed would not want to develop computing faculties, and the already privileged social group could profit from having one more privilege at their disposal. However, pressure from the oppressed resulted in the development of the personal computer since the 1970s, the internet between the 1980s and 1990s, and the mobile smartphone since the 2000s, which made computing technology more widely available in society (Wyche and Murphy, 2012; Schäfer, 2011). Nevertheless, even if this technology became available in the oppressed handiness, its underlying techniques are not necessarily accessible due to lock-in functions, proprietary software, and *black-boxing* (Latour, 2005; Evangelista, 2005). In addition to being closed, these technologies sometimes trap so-called users in dehumanizing cybernetic loops that take their attention and content for free in social network apps (Kushner, 2021). In contemporary Informatics, so-called users may feel oppressed by computer designs that do not support or even threaten their existence with commercial dark patterns (Mathur *et al.* 2019; Baroni *et al.*, 2021), racialized profiling algorithms (Noble, 2018), generalized surveillance (Zuboff, 2019), gendered interfaces (Brahnam and Karanikas, 2011), sexual orientation stereotypes (Pereira and Baranauskas, 2015) and heteromation (Ekbia and Nardi, 2017).

With this brief history of Informatics, we want to convey that computers are inherently political and ambivalent: they can both intensify oppression or liberate, as they carry the intentions of the social groups that developed them. These intentions can be reverted or subverted. Oppressors can quickly revert a liberating attempt and stop the insurgence against them, while the oppressed must critically subvert the oppressors' intentions embedded in technology to affirm and embed their liberating intentions. An oppressed person may feel oppressed directly by the computer, but the source of oppression will never be the computer itself (Gonzatto and Van Amstel, 2017; Van Amstel, 2019). There is always a human being behind technique (Vieira Pinto, 2005), or a social group behind technology, and these are the authors who must be held accountable for a particular computer mediation. In The Blank Character game included in the Theater of the Oppressed, Boal recommends that:

> The protagonist imagines someone, a real person who is one of his oppressors. This person must be a concrete person, not an abstraction like 'the education system', 'capitalism', 'globalization', etc., but a real person, well known to the protagonist, a person through whom those oppressions emerge. (Boal, 2005, p. 170)

Even if techniques are designed to oppress, they are not the oppressors. Any technique is a mode of being human and, hence, carries human intentions. Once detached from that same being, technique

becomes an empty abstraction. Speaking of technique as an autonomous entity that escapes human control and eventually dehumanizes humans is a useful abstraction to hide what is really happening: dominant social groups using elaborate technology to oppress dominated social groups. Technology, in this case, is used as a scapegoat for oppression (Vieira Pinto, 2005), as if the oppressed could oppress themselves by using that technology. This ideology spreads fear for new technologies among users, which prevents them from taking the initiative of early appropriation and, instead, leave their futures to the "good hands" of large corporations (Gonzatto et al., 2013).

This theoretical formulation does not imply that computers should not be criticized and transformed — they must be. Since it cannot have its intentions, the computer cannot be an oppressor, but it can be an oppressive mediation to fulfill the intention of designers and the social groups they work for (Gonzatto and Van Amstel, 2017). Going beyond the mediation in itself, the concept of computer-mediated oppression refers to the role played by computers in amplifying the reach of existing oppression relations such as classism, sexism, racism, ableism, and others. Alleged designers become oppressors when they historically expand their handiness by curtailing the so-called users' handiness through computer-mediated oppression. However, users can discover hidden opportunities for action, in addition to subverting oppressive intentions, expanding their handiness, and liberating both social groups from oppression. Such movement requires transforming reality.

4.3 The social division of Informatics

Work is the foundational human activity that transforms reality, starting from and ending in handiness (Gonzatto and Merkle, 2016; Vieira Pinto, 1960). Since it deals with reality transformation, work is at the heart of social disputes and contradictions. In Informatics, those who cannot produce their computers — or those whose computers' are not recognized as such — end up being relegated to the social group of the so-called users, who are not workers in this area, even if they are workers in other fields.

Alleged designers work hard to keep the servitude privilege (Antunes, 2018) in Informatics, even if that means accepting precarious work conditions such as freelance contracts and platformed labor. In class relations, alleged designers might be on the oppressed side, as they usually are not business owners and must sell their work to produce their existence (Matias, 2014; Löwgren and Stolterman, 2004, p. 7). However, in handiness relations, designers are at the oppressor side when they develop their handiness at the expense of the so-called users' underdeveloped handiness (Figure 2).
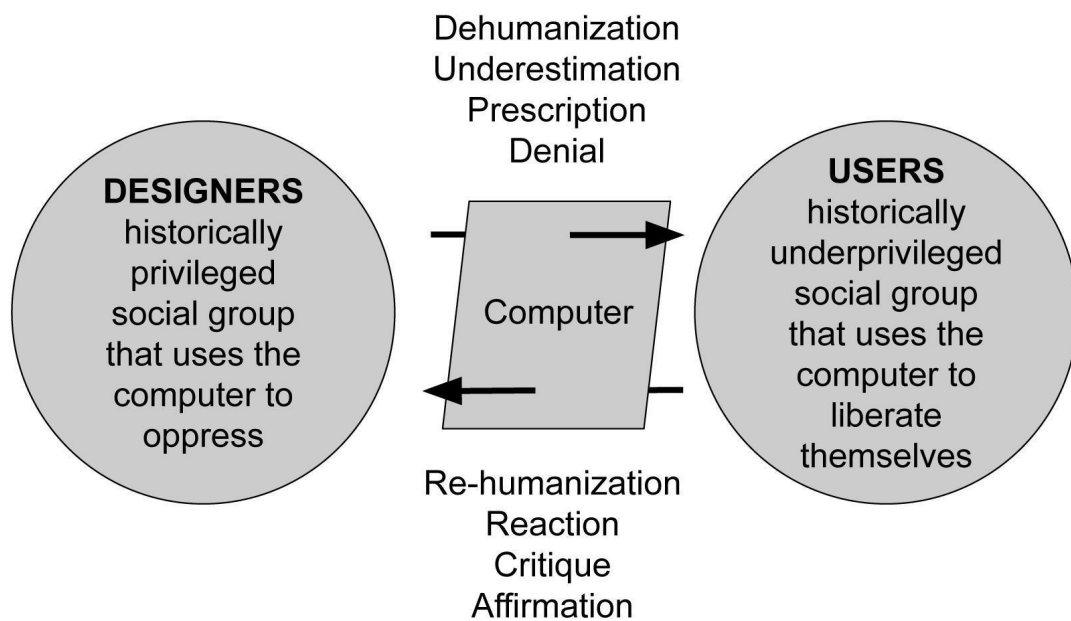
Figure 2. The user oppression in Human-Computer Interaction.

This condition is contextualized within historical production relations that divide people into two social groups based on their different handiness: alleged designers and so-called users (Hales, 1994, p. 15; Van Amstel, 2020). Due to this division, so-called users are often excluded from defining computers' purposes in a way that also benefits them. In this social division of Informatics labor, alleged designers are better off, even if some rare users might be capitalists — like in financial applications. Those users still depend on designers to develop their handiness, as typical from the oppressors' side. In this way, the structural oppression puts designers in the position of computer production protagonists, while so-called users stay in a marginal role. Designers oppress users by legitimizing their superior position in the hierarchy of computer-mediated existence, even if they are in an inferior position regarding capital-mediated existence. Due to that hierarchy, designers consider, hear, or attend to so-called users only if there is financial, professional, or political advantage. Designers include uses through abstract processes like personas (Massanari, 2010) or concrete processes like participatory design (Ehn, 1988). In both cases, users are included for restricted participation in design because they still need to abide by the designers' domain to fulfill some of their needs and desires.

If we look more deeply into Informatics history, we quickly find that the production and handling of digital technologies has been restricted to a set of specialists from its very beginning (Ensmenger, 2012). In the early days of Informatics, with general-purpose electronic machines, there were no users. Grudin (2012) reminds us that operators initially used computers in a direct manipulation (hands-on) that involved setting switches, positioning dials, and connecting cables. Using a computer

did not differ much from programming it. Using computers was a specialized activity, and it meant being part of their production process. The notion of users arose linked to industrial development and the separation of the production and consumption spheres. The productive specialization of machines placed the use category under an even more restricted scope[10]. As pointed out by Niels Kerssens (2016, p. 127): "the term user was initially used by engineers in the computer industry, to try to identify an emerging figure: the people who would use the technologies they engineered".

As the development of computers left the military and academic spaces (Grudin, 2012) and approached people's daily lives, the image of so-called users as non-specialist became prevalent. For example, Kerssens (2016, p. 64) observes how the vocabulary of computer magazines and word processors between the 1970s and 1980s, contributed to spreading the idea of (end) users being associated with managers, usually men in organizations, who didn't directly operate the computer but who still benefited from its products: information. The hand-on use was a skill of the operators, generally women secretaries. Typing or editing texts on the computer were not considered worthwhile for managers. This is a case of manual and intellectual division of labor enmeshed within a gendered division of labor in Informatics work. Currently, users have absorbed the concept of operators, presupposing a person who was and still remains historically unspecialized in handling computers (Gonzatto, 2018).

Historically, users do not accept this condition passively all the time. Computer anger or computer rage (Charlton, 2009) is a common reaction to user oppression, which mistakes the oppressor for the oppressors' technology. This reaction can be historically traced back to the Luddites who broke factory machinery to protest extreme work exploitation at the beginning of industrialization. Similar to how the worker movement learned that the machinery was not the oppressor and redirected their anger to their patrons (Marx, 2019), nowadays so-called users organize in associations to state-specific demands, develop well-founded critiques of computer technology, and hack their computers for their purposes (Gonzatto, 2018). Above all, they realize that they need to affirm the positive aspect of their condition of being users and the negative aspect of the condition of non-users (Satchell and Dourish, 2009). To raise consciousness on their positive aspects, they need to debunk the ideologies that sustain the negative aspects of their existential condition.

5 Denouncing userism

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[10] The need to meet commercial goals by serving consumers through User-Centered Design (UCD) and other use-oriented approaches reduced design space even before a product is available for consumption (Vandenberghe and Slegers, 2016). In theoretical studies in information, communication, and media sciences, Jeanneret (2009) finds that the notion of use in the French approach highlight cultural issues, and in the North American Uses and Gratifications approach category served to affirm the freedoms of the "receiver" of media messages (Lacerda and Maziviero, 2013). In a more limited scope, the conception of using digital artifacts in HCI has a tradition of associating use as the use of the computer as a tool (Kerssens, 2016), external objects that enable functions aimed at productivity as long as they fit the expectations already set for end-users (Jeanneret, 2009; Gonzatto, 2018).

HCI's ontological statements can be considered part of an emerging ideology that seeks to naturalize the users' oppression as an unavoidable division of Informatics labor, the only viable way to produce computers in society. Userism is the justification for the denial of the possibilities of historically oppressed social groups to use and produce technologies to design their means of existence and to develop new conditions for being humans. The user oppression intersects with well-known oppression relations, such as racism, sexism, ableism, ageism, homophobia, among others. Those who are already oppressed without the mediation of computers are once again oppressed with the introduction of computers. The unleashing potential of technology fades away as if the oppressed group was not able or had no right to use it.

The users' handiness is considered underdeveloped in relation to the designers' handiness. In this way, an intervention in the users' handiness is justified by introducing computers that provide controlled actions and access to information (Gonzatto, 2014; Van Amstel, 2020). This exogenous human development legitimizes the dependence on so-called users while expanding the handiness of alleged designers, including so-called users within their field of action. Designers can act through the users' actions and, indirectly, how they structure and organize computer interfaces. The expansion of the designer's handiness comes from reducing the so-called users' handiness, which loses possibilities and rights to transform technologies. Referring to the users of mental health services, Augusto Boal states that:

> Treating users as users is already, in a way, oppression. User, sick person, patient, infirm, disabled, and so on are Citizens with the same basic rights as any Citizen, and even some specific to their condition. (Boal, 2009, p. 238)

Userism distinguishes social groups based on their historical relationship with specific technologies, particularly those linked to economic and power relations, such as computers. The oppression experienced by so-called users stems from the limitation, regulation, or denial of participation in the production (including the production of their own uses) of technologies that can effectively transform their surroundings and serve as a mediation for the production of existence for endogenous purposes, in other words, *being for the self* (Vieira Pinto, 1969).

Userism operates in an ideological way to assert a hierarchy that tries to justify that the privileged design, guide, and rationally satisfy the needs of the underprivileged while guaranteeing the right or even unregulated opportunities to exploit them, monitor them, and control their behavior, bodies, interests, and so forth. This oppression is discursively produced in theories, research, and everyday conversation and embodied by digital methods, practices, and products. In this oppressed reality, computer production performed by so-called users becomes invisible or less important for HCI. User design is recognized insofar as it can become a vernacular language, an entertaining curiosity, a new product idea, a service extension, a marketing argument, or a risk mitigation strategy.

For example, when users adjust systems (Spinuzzi, 2003), adapt systems to use (Dourish, 2001; Bannon, 1991; Kaptelinin and Nardi, 2012), produce interactions in the situated action of use (Suchman, 2007; 1993), give meaning to artifacts (Suchman, 2002), stress modes of production (Evangelista, 2005; Ronzani, 2011), design through use (Brandes *et al.*, 2008), and interfere with projects through non-use (Satchell and Dourish, 2009), they are no longer considered to be users or, by the same token, their actions are no longer considered to be just use (Gonzatto, 2018). In these cases, users' actions label as non-intentional, intuitive, or spontaneous design, whereas their existence is perceived as a less-than-designer human. They are called everyday, amateur, non-expert, or diffuse designers (Gonzatto, 2018) but never as users who also design. Users' negative identity is revealed by studies of collaboration and participation in design that distinguish between designers and non-designers (Grint and Woolgar, 1997; Rose, 2003; Sanders and Stappers, 2014; De Ruyck et al., 2019; Schelings et al., 2020). It seems like there is a potential danger of recognizing the intentionality, rationality, and design thinking of the so-called users in their collaboration and participation in the production of material culture, largely conceived. The danger stems from a contradiction: it is impossible to call these people users because their participation is legitimate, but neither can they be called a designer because their participation is peripheral. The contradiction generates a limit-situation (Freire, 1987; Vieira Pinto, 1960) that throws certain people into the zone of non-being, like defining Black people as non-white beings (Fanon, 2008). Userism does not only prevent so-called users from developing to their full handiness potential; it keeps HCI closed in a cybernetic loop of sustaining oppression.

There are so many practices and methods justified by userism, that we believe that the major implication of criticizing and reviewing the notion of users is opening the HCI field for new participatory practices and methods. In that way, a practical implication of denouncing userism is experimenting with new roles of so-called users in HCI production relations. Not as spectators of computational development but as spect-actors (Boal, 2000) of computational development, since real computing is already being produced by these people daily in their lives. For example, recognizing new ways of participating in HCI through strikes and political pressure (Gonzatto, 2018) can open up spaces for users to take a leading role in collective existential projects. We also believe that the continued critique around the concept of the user might have broader implications, such as rethinking notions of citizenship, digital rights, access, and transparency.

6 Conclusions and outline for future research

After looking at the history of production relations between those who design computers, the alleged designers, and those who use them, the so-called users, we conclude that these social groups are bound by the oppression that prevents human development to their full handiness potential. From the revision of previous work and the development of a dialectical-existential theory framework over

users, we recognized and denounced the userism ideology in the HCI field. Userism consists of denying, underestimating, preventing, locking, and exploiting the handiness of people deemed computer technology users. People who suffer from userism are already suffering from other kinds of oppression, adding up to the undergoing historical dehumanization of workers, women, Black, indigenous, LGBTQiA+, disabled, and other disenfranchised people. It is clear that these people need HCI to produce their existence, yet after this research, it may become more apparent that HCI also needs these people to liberate the field from userism.

In addition to further research on userism within the intersectional research thread on computer-mediated oppression, we envision a research agenda that experiments with new ways of developing and using computers for liberation. From the dialectical-existential perspective, we understand that only those who suffer from userism are motivated to deal with the struggles of the fight to overcome userism. Although an initial impulse may be to describe tactics to resist oppression, there's a need to look for ways in which research can participate in the struggle, for example, by legitimizing the practices and knowledge that have been already developed by the oppressed.

The existential delineation of user oppression can contribute to uniting and accumulating past and future studies of computer-mediated oppression. Rather than denying the category of users or of considering it is already overcome by a post-userism interface paradigm (Baumer and Brubaker, 2017), we believe it is strategic to maintain and assert the struggle for liberation within the scope of the social division of Informatics labor. We agree that "the different positions we hold and diverse perspectives we have cannot be flattened into one homogeneous entity called user" (Subrahmanian *et al.*, 2020, p. 3), but we think that simply stating that "we are all not users" (Subrahmanian *et al.*, 2020, p. 3) or "we are all designers" (Subrahmanian *et al.*, 2020, p. 11) is not enough to overcome userism even if the criticism is fairly put. In contrast, simply replacing "user" for "person" (Norman, 2008), "human" (Bradley *et al.*, 2013) or "people" while maintaining the same production relations can even intensify the oppression by covering up userism. As Suchman (2002, p. 94) recommends: "we need to begin by problematizing the terms 'designer' and 'user' and reconstructing relevant social relations that cross the boundaries between them".

The best strategy we found so far to fight *userism* is to claim users as a political category. If we can learn from the Black movement (and other social movements that have adopted this strategy), there are some advantages in assuming this identity to dialectically overcome this very distinction (Fanon, 2007). By affirming the user identity[11], even if we may look strange or monstrous (Angelon and Van

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[11] Grudin (1993, p. 117) suggests avoiding the term user: "When possible, be specific and say 'secretaries', 'nurses', 'engineers', 'writers'." Grudin (1993, p. 112) argues that "Computer users do not consider themselves 'users' [...] the term 'user' retains and reinforces an engineering perspective", assuming who they are based on their reference to a computer (such as casual, novice, naive, expert, non-professional user, etc). Taking user as a political category, it is also necessary to problematize the identities of the other (e. g. the power hierarchies assumed when referring to person with drug dependence, addict, or drug user), and user can be a self-proclaimed identity, as in the case of user associations (as in the health context) that assume user a negotiation tactic.

Amstel, 2021), we can make the issue more visible to society, who is the collective body that can indeed overcome the oppression. By that, we acknowledge that it is necessary to strengthen dialogue with other studies of oppression, such as feminist theories (Bradley *et al.*, 2015; Bardzell and Bardzell, 2015b; Castelini, 2018), critical race theories (Gary and Vines, 2013; Ogbonnaya-Ogburu *et al.*, 2020), and decolonial theories (Alvarado Garcia, 2021; Bidwell, 2016) in order to open up new perspectives over HCI, mainly to deal with the intersectionality between multiple oppressions that affects the same individual or social group (Rankin and Thomas, 2019; Schlesinger *et al.*, 2017).

In addition to contributing to fields that already have critical concerns on users, such as Computer-Supported Cooperative Work (CSCW), Participatory Design, and Science and Technology Studies (STS), we believe that this research might contribute to: a) expand research into Sustainable HCI beyond Sustainable Design Goal no. 12, which refers to responsible use of computational resources (Hansson et al., 2021); b) disclose the collective implications of developing by becoming users of a digital technology in HCI for Development (HCI4D) (Dell and Kumar, 2016); c) anticipate the possibilities of oppressing and liberating underdeveloped handiness in disaster situations like those studied by Crisis Informatics (Soden and Palen, 2018); d) move forward the debate on power and privilege in shaping HCI values in Socially Aware Computing (Pereira and Baranauskas, 2015); e) legitimate social justice-oriented interaction design (Dombrowski et al., 2016) based on handiness inequality and historical userism; f) decolonize HCI (Alvarado Garcia et al., 2021), eschewing the epistemic injustice (Kumar and Karusala, 2021) of which the user oppression is just a tiny part.

In the future, the dialectical-existential perspective outlined here may grow to become a fully-fledged theory of computer-mediated oppression. New contributions in this regard might come from close readings of bell hooks (2014) — whose thinking relies on Freire's ideas, Milton Santos (2005) — who used Marxist and existentialist frames to understand underdevelopment; and Marcela Lagarde y de los Ríos (Paixão and Eggert, 2012) — who contextualized Beauvoir, Marx, and Freire to the Latin American woman condition. These authors have produced universal categories based on the analysis of neglected particulars, reverting the hegemonic flow of universalized knowledge produced by the metropolis and applied to the colonies (Vieira Pinto, 1960; 1969). In this research, we have drawn attention to the universality of the users concept in HCI. Many other neglected particulars are still waiting to be totalized, historicized, and brought to critical consciousness in this field.

We want to continue deepening the analysis of HCI production relations based on the dialectical theory of existence, exploring the specific implications of the user condition in underdeveloped nations and other contexts. We hope that future studies may capture the legitimacy of situations in which underprivileged social groups react to oppression and behave in unprecedented and unexpected ways concerning personas, psychographic profiles, and user models embedded or implied by Graphic or Conversational User Interfaces. By doing so, we believe it will be possible to include in HCI the counter-projects (Van Amstel and Gonzatto, 2020) of the so-called users, for example, the platform cooperatives designed by app delivery couriers and app drivers (Abilio *et al.*, 2021), or the mundane

technologies appropriated by the Brazilian favelas (Nemer, 2022), to name just a few cases of users fighting for the ontological vocation of becoming-more.

Future research should also consider the implication of the oppression of the designers in userism. This research has focused chiefly on the underdeveloped handiness relation, in which designers have historically played the role of oppressors. However, they also play the role of the oppressed in other relations, such as class, gender, and race. An oppressed designer might need to oppress users to produce their existence even if they do not want to do that or are not fully conscious of it. The user oppression cannot be fully understood apart from the oppression of the waged worker, the lowly paid immigrant, the female emotional labor, or the Black technician.

Future research can delve into the alienation and conscientization processes of userism to develop further the critical humanistic ethics of HCI (Bardzell and Bardzell, 2015a). Analysing aesthetics and rhetorical uses of users (and non-users) in graphical user interfaces, academic and professional discourse, and building an idea of humanity and human values based on computers might come in handy to scrutinize ethical aspects of userism. The analysis could extend to the dialectical affirmations and negations of userism in public service design, platform work, digital rights, mass communication, and counterculture, among other fields. These fields could offer plenty of empirical material on the cultural identity of specific technology users, user associations, user activism, and fragmented user resistance actions.

We hope that the continued problematization of the so-called users' oppression may construct another image and existential conditions of the so-called users. This image and condition might help build ethical questions and human values in HCI (Leitão *et al.*, 2017) with ontological depth, contributing to the existence of diverse social groups, not just of those who are privileged by current computer production relations.

Acknowledgments

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