Editorial. 'Trajectories of use' and 'the object as producer and user': two ideas for historiographical subversion

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ABSTRACT   **This editorial contributes two ideas to the discussion proposed by the guest editors concerning the dimension of use of technical objects. In the first place, it proposes incorporating the idea of 'trajectories of use.' The concept is built upon the notions of 'technological adjustment' and 'technological reconstitution,' both proposed by Pfaffenberger, as well as from the ideas raised by Domínguez Rubio regarding what he calls the 'relentlessness of things.' The second idea is that Barad's relational ontology is useful for outlining historiographic programs that respond to the urgent need to creatively subvert methods, conceptual frameworks, and traditional categories. This idea is developed according to Francesca Bray's proposals, on the one hand, and Giaccardi and Redström, on the other, who coincide in pointing out that the limits between production and use, have collapsed.**

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Design history used to be the history of everyday objects, with a focus on people who made them, their influences, training, and their professional practice. Today, we know that this historiographic effort "fails to recognize the historical significance of design" (Fry et al., 2015, p. viii) and, therefore, its findings are trivial and inadequate (Fry, 2015). Because of this, design historians seek new methods, conceptual frameworks, and categories that account for what Appadurai termed 'the social life of things' (1988).

These new perspectives take into account that people and artifacts establish co-production relationships. We design artifacts, but these are inscribed with certain discursive practices and, therefore, following Barad (2003), they *produce* the subjects that make them. Understanding this is essential to recognize the historical significance of design. Likewise, the new approaches require considering something that we have known for decades: objects give meaning and value to relationships between people (Appadurai, 1988) and largely define individual identities, as much as families and communities used to (Knorr Cetina, 1997, p. 1). These meanings basically depend on social conventions, subjective interpretations, and cultural valuations, that is, on factors that go beyond what we can control when we as designers project the objects that we launch into the world. As Appadurai points out, the mean-

ings of things are inscribed in their forms and uses, but above all, in their trajectories (1988, p. 5).

Although Appadurai is not specifically talking about design, but rather giving an anthropological perspective of economic objects that circulate in different regimes of value – and particularly of their exchange value – (1988, p. 4), we can read the three elements that he mentions in the quote just cited – forms, uses, trajectories – as a compact history of contemporary design paradigms, which will help me to develop some ideas. Indeed, firstly we believed that the value of the objects we designed depended on their *form*, to such an extent that aesthetics was the great ally of design. Consequently, the historiography of design borrowed its methods and values from the history of art and architecture (Fry, 2015, p. 4). Then, when we finally realized that use was as important as form, or even more important, we moved to the user-centered paradigm and turned to ethnography and social sciences.

At that time, it helped us to stop asking ourselves what do objects *represent* or *symbolize* for the communities, and to begin inquiring what do objects *do* for the communities (Domínguez Rubio, 2016, p. 60). In the words of Anthony Dunne, we should pay more attention to the way in which objects behave and, therefore, it was necessary to develop an aesthetic of use (1999). The Actor-Network Theory was particularly conducive in order to make this shift, since it incorporated objects into social theory (Harman, 2016), recognizing that these are not mere repositories of meaning, but rather material agents that shape social relationships (Domínguez Rubio, 2016, p. 59). But now we discover that using objects is a much more complex matter than what user-centered design is capable of assimilating, and we begin to realize that we must consider their *trajectories*, the third element mentioned by Appadurai. Although for him the trajectories are related to the journey from production to consumption, passing through exchange and distribution (Appadurai, 1988, p. 13), considering them allows me to propose two ideas about the problem posed by the guest-editors of this issue around what they call 'the dimension of use' of technical objects.

TRAJECTORIES OF USE

The first idea is that the notion of use needs to be expanded, for which I propose to incorporate the concept 'trajectories of use'. To explain the concept, I will build on Pfaffenberger and the strategies of 'technological adjustment' and 'technological reconstitution' (1992, p. 285), as well as on the idea of the 'relentlessness of things' raised by Domínguez Rubio (2016).

In 'Technological Dramas', his fascinating article published in 1992, Pfaffenberger proposes a myriad of highly productive ideas intended

1 This is how Pfaffenberger synthesizes the distinctiveness of technopolitics: "It is the reciprocal construction of political aims and artifacts, coupled with the deliberate fabrication of controlled social contexts, that characterizes what is specifically technological about technological politics." (1992, p. 291)

to show that technology is political by distinctive means, that is, technological means**1** (1992, p. 287), all of them based on the idea that users do not accept these means passively or with resignation. One of these ideas, central to his argument, is that the political values embedded in artifacts must be discursively regulated, for which it is necessary to legitimize them, that is, to surround them with means that *constitute* that political aim (1992, p 294). How are they legitimized? Pfaffenberger claims that in order to be persuasive, these means do not operate through verbal discourses, involving propositions and arguments, but through symbolic discourses, more specifically, through the languages of myth and ritual (1992, p. 284). And here we come to the point that allows us to nurture the notion of trajectories of use. Those discourses can be resisted, subverted, sabotaged, and revolutionary altered by users (1992, p. 285). The *technological drama* is precisely a discursive sequence of technological 'statements' and 'counterstatements' that unfold recursively through scenes (the context), actors (designers, artifacts, and users), and audiences (1992, p. 286).

Pfaffenberger conceives the technological drama as a performance composed of three acts: technological regularization, technological adjustment, and technological reconstitution (1992, p. 285). It is worth characterizing these acts, suggestively exposed in 'Technological Dramas' through multiple examples, even at the cost of deviating (apparently) from my objective. In the first act, regularization, designers create (or modify) an artifact or a technological system so that it is "capable of signifying and coercively implementing a (...) vision of a stratified society, one in which power, wealth, and prestige is differentially allocated" (1992, p. 291). For this technology to penetrate, these same actors present the artifacts or systems wrapped in myths about the conservation of civilization and human dignity (1992, p. 285), as well as in rites destined to model the actions of people in the social space (1992, p. 286). But Pfaffenberger is very clear about this: neither the myths nor the rituals intended to generate contexts are powerful enough for users to accept with apathy and passive resignation. Users defy these attempts to regularize and stratify social life. Indeed, both discourses and artifacts are resisted by those who see their power, self-esteem, or prestige diminished (1992, p. 286). Then, the drama gives way to the second and third acts.

2 Pfaffenberger offers a well-documented typology of contextual regularization strategies, thereby indicating the omnipresence of a key element in technological regularization: context-fabrication (1992, p. 291). These strategies are: exclusion, deflection, differential incorporation, compartmentalization, segregation, centralization, standardization, polarization, marginalization, delegation, and disavowal (1992, pp. 291–294).

And here is precisely what I am interested in highlighting from 'Technological Dramas.' Both, technological adjustment and technological reconstitution take advantage of the inconsistent, ambiguous, and contradictory nature of regularization efforts (1992, p. 287). By exploiting indeterminacies, users who are affected by contextual regularization strategies**2** reinterpret and redefine the rules and relationships (1992, p. 297). Pfaffenberger

presents us three 'themes' of technological adjustment, those that delineate, in part, what I call trajectories of use. These are (1) countersignification, through which users dress up the artifact with a more favorable frame of meaning; (2) counter-appropriation, through which excluded groups reinterpret the dominant discourse to legitimize access to the artifact; and (3) counterdelegation, through which users slightly subvert, disarm, silence, or in some way suppress the coercive function of the artifact (1992, pp. 300–303). All these adjustment strategies have one element in common: they "do not openly attack the foundations of technical regularization" (1992, p. 303), and rather correspond to a response of accommodation to it (1992, p. 301). The mechanisms of technological reconstitution, on the other hand, consist in that the users, guided by a self-consciously 'revolutionary' ideology of symbolic inversion (called anti-signification), reshape the technological production processes and artifacts, producing counter-artifacts, counter-contexts, and even counterregularization strategies (1992, p. 304). But the drama does not end here. Obviously, agents of regularization attempt to gain control of these counter-artifacts by "performing technical modifications that blunt their revolutionary potential," a process that Pfaffenberger calls 'technological reintegration' (1992, p. 307).

As we can see in this extensive account, 'the dimension of use' of technical objects brings with it a trajectory that goes through phases of accommodation, appropriation and counter-appropriation, resistance and reintegration, adjustments and misalignments, all of them enabled by a performative and recursive process that signifies, resignifies, countersignifies, anti-signifies and designifies these objects (Pfaffenberger, 1992, p. 308). As we will see below, the use of objects is a fluid phenomenon, as they are intertwined with discursive and material practices that are often unstable, inconsistent, ambiguous, and contradictory.

By making us think of objects and things as two *discrepant* realities, and posing a critique to the trends that study the different ways in which objects express their agency, Domínguez Rubio (2016) adds another layer to the notion of trajectories of use. On the one hand, he points out that "objects wear down and change, (...) they break, malfunction and have to be constantly mended, retrofitted and repurposed" (Domínguez Rubio, 2016, p. 60). Furthermore, as users, we also destabilize and subvert them: "they are routinely misused, misrecognized and disobeyed" (Domínguez Rubio, 2016, p. 60). This approach to objects and things, interesting for a historiographic program,

> requires us to think ecologically, that is, not in terms of objects, but
> in terms of the discursive and material conditions and practices (...)

under which certain things can be rendered possible, effective and re-producible as objects endowed with particular kinds of value, meaning, and power. (Domínguez Rubio, 2016, p. 60)

It should be noted that this idea is aligned not only with Pfaffenberger but also with some of the proposals made by Karen Barad, who relies on Foucault to point out that discursive practices are the material conditions, historically situated, that enable and constrain knowledge practices (2003, p. 819). And even more important: discursive practices do not describe, but rather *produce* the subjects and objects of knowledge practices (Barad, 2003, p. 819). We will come back to this.

For Domínguez Rubio, thinking 'ecologically' supposes considering, in the first place, temporality and change, as well as "locating our enquiry at the level of the processes and negotiations through which different material and symbolic arrangements come into being" (2016, p. 64). Secondly, it implies considering that the processes by which things are positioned as objects "are constantly renegotiated within different regimes of value and meaning" (Domínguez Rubio, 2016). These are eminently relational processes that, as such, can be brought into an historiographic program. And they have been. Here is one example. Tony Fry and Anne-Marie Willis point out that their research on the history of steel is based on a relational methodological approach (2015, p. 1). This makes such research revolve precisely around the 'ecologies of steel,' which not only include material (natural/artificial), technological, and economic ecologies of exchange but also, obviously, ecologies of meanings and knowledge exchange (Fry & Willis, 2015). In the words of the authors, what they offer is "a neo-materialist exploration of the determinate relationships of steel from the perspective of the relationality of ecologies" (Fry & Willis, 2015, p. 5).

In short, the trajectories of use account for the inconsistencies, ambiguities, and contradictions of the contextual strategies of regularization; they consider the processes of adjustment and reconstitution, appropriation and counter-appropriation, resistance and reintegration; they are sensitive to attrition, failure, negotiation, and accommodation; they attend to transformations in symbolic, performative, and discursive conditions; they take into account the different regimes of value and meaning; and, finally, they keep the co-production process alive.

In this way, trajectories of use take over the warning raised by Knorr Cetina in his now-classic 'Sociality with Objects' regarding our relationship with them:

> We should be careful not to construe object relationships simply as pos-
> itive emotional ties, or as being symmetric, non-appropriative, etc. The
> characterization one needs to look for must be more dynamic, allow
> for ambivalence, and account for the durability of people's engagement
> with objects. (Knorr Cetina, 1997, p. 12)

THE OBJECT AS A PRODUCER AND USER

A second factor to consider when expanding the notion of use is that "there is
no point in which something stops becoming production and becomes use, or
consumption", as Francesca Bray makes clear in the interview we publish in
this issue. This idea, much more subversive than the previous one, implies not
only expanding but also establishing fluid boundaries for what we understand
by 'use' or 'user,' in order to make them permeable to what we conceive as the
opposite pole: production. We have already said that we establish co-produc-
tion relationships with objects. By itself, this idea disrupts the production/use
duality as we conceived it. But there is something else. Bray explains it this
way in the interview: "The user category – and how it is deployed – (...) tends
to build this kind of polarity that separates production from consumption. (...)
The point is that the two make up a series of entangled operating sequences."

Elisa Giaccardi and Johan Redström offer clues to understand
what these entangled operating sequences are and how they work. Although
they do not refer to them exactly in those terms, without a doubt citing them
in length will help us understand the phenomenon:

> The boundary between production and consumption is almost fully
> dismantled. No longer is the design process something that happens
> before production; rather, we see a complete intertwining of devel-
> opment and deployment, sometimes as frequent as daily releases. It
> appears that this characteristic of a constant becoming is going to be
> further accelerated by technologies that actively "learn" while in use,
> changing and adapting over time at an even more fundamental level
> than is currently the case. (Giaccardi & Redström, 2020, p. 33).

In this sense, expanding the notion of use – and making it permeable to no-
tions such as production and co-production – implies recognizing that "design
shifts toward more fluid flows of interaction between people and processes,
as well as between people and the systems of things mediating such process-
es" (Giaccardi & Redström, 2020, p. 34). But the most radical change might
be this one: as designers, we must assume that objects also *make* things and
use them (Giaccardi & Redström, 2020, p. 41). Evidently, the user-centered

3 Elisa Giaccardi talks about the 'agential shift' to tell us that, since things collaborate in the design process with their own skills and perspectives, we should consider them as partners in that process (Giaccardi, 2019).

design paradigm is no longer viable in this scenario. We cannot ignore that technical objects such as algorithms, virtual assistants, or any of the devices that monitor bodily functions are expressing an unprecedented agency (they learn, act, optimize and transform themselves) and, as Giaccardi and Redström point out, they are *agents in the design space* (2020, p. 35).[3] Coinciding with what Bray states in the interview, Giaccardi and Redström point out that all this supposes the collapse of the current distinctions between production and use, as well as between subject and object, and between producer and produced (2020, p. 38).

HISTORIOGRAPHICAL SUBVERSION

The question now is whether these ideas are useful to formulate a historiographic program that accounts for the sociotechnical frames in which design and technologies are situated. To begin to answer it, it should be noted that history, as a discipline, practice, and method, is in deep trouble (Fry, 2015, p. 4); it faces the need to seek new organizing principles (Kuukkanen, 2020, p. 4); and, consequently, some historians call for developing a new notion of history (Tamm & Simon, 2020) or, in other words, to create radically transformed notions of history (Fry, 2015, p. 6). And this crisis goes beyond history as a discipline. The call is to undertake a radical change in the humanities (LeCain, 2017) and, even further, to rethink the foundations of our understanding of life and human nature (Domańska, 2020). Why? Because existing concepts and theories are being overtaken by phenomena appearing in everyday reality, as Ewa Domańska points out (2020, p. 185). Simple and clear. As we can see, the collapse of the currently valid distinctions between production and use (Giaccardi & Redström, 2020, p. 38) is just one of those phenomena.

In this context, a historiographic program that responds to the need to find new organizing principles and mobilize transformative notions must consider the relational ontology proposed by Karen Barad. It is a fascinating ontology for design historiography (as for any other), based on two principles: (1) the boundaries and properties of beings are not inherent, but relational; and (2) meanings are not properties of words, but rather emerge in the material reconfigurations of the world (Barad, 2003).

Evidently, this relational ontology makes it possible to address the collapse of the boundaries between categories, which we conceived as antagonistic, in a more creative and therefore productive way. Through her work, Francesca Bray offers examples of this. Let us take one. In their recent research on crops, Bray and colleagues question the boundaries between mobility and permanence, pointing out that when focusing on the movement of things through various places, as mobility scholars persistently do, we

"lose sight of the places themselves, of the complex material-cultural embed-dedness of things" (Bray et al., 2019, p. 21). Likewise, they point out that a mobility that does not consider permanence "inclines us to dehistoricize the thing at its point of origin" and to ignore that these objects continue "moving on the spot," thus tracing "trajectories of remaining" (Bray et al., 2019, p. 21).

As we can see, the two ideas I put forward in this editorial (the notion of trajectories of use and the dissolution of the limits between use and production) offer, each in its own way, possibilities to subvert our methods, conceptual frameworks, and categories. I hope they are useful to design, technology, and sociotechnical systems historians who are already bent on seeking new organizing principles for their historiographic programs. Or at least, that the exposed rationale is inspiring to inquire, precisely, (1) how contextual strategies of regularization unfold; (2) what are the negotiations and the discursive, material, and performative conditions that make possible the dynamics of production/use of what we call 'design'; and (3) what forms do adjustment and reconstitution strategies take, as well as the discursive, material, and performative practices that we enable in this fluid, situated, unstable, and open processes of production/use. ▣

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